

## SEQUENCE LISTING

<110> Evans, Ronald M.  
Chen, J. Don

<120> A FAMILY OF TRANSCRIPTIONAL  
CO-REPRESSORS THAT INTERACT WITH NUCLEAR HORMONE RECEPTORS  
AND USES THEREFOR

<130> SALK1510-3

<150> 09/337,384  
<151> 1999-06-21

<150> 08/522,726  
<151> 1995-09-01

<160> 11

<170> FastSEQ for Windows Version 4.0

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<212> PRT  
<213> Homo sapiens

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Asp Pro Ser Ala Phe Ser Tyr Ala Pro Pro Gly His Pro Leu Pro Leu  
50 55 60  
Gly Leu His Asp Thr Ala Arg Pro Val Leu Pro Arg Pro Pro Thr Ile  
65 70 75 80  
Ser Asn Pro Pro Leu Ile Ser Ser Ala Lys His Pro Ser Val Leu  
85 90 95  
Glu Arg Gln Ile Gly Ala Ile Ser Gln Gly Met Ser Val Gln Leu His  
100 105 110  
Val Pro Tyr Ser Glu His Ala Lys Ala Pro Val Gly Pro Val Thr Met  
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Gly Leu Pro Leu Pro Met Asp Pro Lys Lys Leu Ala Pro Phe Ser Gly  
130 135 140  
Val Lys Gln Glu Gln Leu Ser Pro Arg Gly Gln Ala Gly Pro Pro Glu  
145 150 155 160  
Ser Leu Gly Val Pro Thr Ala Gln Glu Ala Ser Val Leu Arg Gly Thr  
165 170 175  
Ala Leu Gly Ser Val Pro Gly Gly Ser Ile Thr Lys Gly Ile Pro Ser  
180 185 190  
Thr Arg Val Pro Ser Asp Ser Ala Ile Thr Tyr Arg Gly Ser Ile Thr  
195 200 205  
His Gly Thr Pro Ala Asp Val Leu Tyr Lys Gly Thr Ile Thr Arg Ile  
210 215 220  
Ile Gly Glu Asp Ser Pro Ser Arg Leu Asp Arg Gly Arg Glu Asp Ser  
225 230 235 240  
Leu Pro Lys Gly His Val Ile Tyr Glu Gly Lys Lys Gly His Val Leu  
245 250 255

Ser Tyr Glu Gly Gly Met Ser Val Thr Gln Cys Ser Lys Glu Asp Gly  
 260 265 270  
 Arg Ser Ser Ser Gly Pro Pro His Glu Thr Ala Ala Pro Lys Arg Thr  
 275 280 285  
 Tyr Asp Met Met Glu Gly Arg Val Gly Arg Ala Ile Ser Ser Ala Ser  
 290 295 300  
 Ile Glu Gly Leu Met Gly Arg Ala Ile Pro Pro Glu Arg His Ser Pro  
 305 310 315 320  
 His His Leu Lys Glu Gln His His Ile Arg Gly Ser Ile Thr Gln Gly  
 325 330 335  
 Ile Pro Arg Ser Tyr Val Glu Ala Gln Glu Asp Tyr Leu Arg Arg Glu  
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 Ala Lys Leu Leu Lys Arg Glu Gly Thr Pro Pro Pro Pro Pro Pro Ser  
 355 360 365  
 Arg Asp Leu Thr Glu Ala Tyr Lys Thr Gln Ala Leu Gly Pro Leu Lys  
 370 375 380  
 Leu Lys Pro Ala His Glu Gly Leu Val Ala Thr Val Lys Glu Ala Gly  
 385 390 395 400  
 Arg Ser Ile His Glu Ile Pro Arg Glu Glu Leu Arg His Thr Pro Glu  
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 Thr Pro Leu Lys Tyr Asp Thr Gly Ala Ser Thr Thr Gly Ser Lys Lys  
 435 440 445  
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 450 455 460  
 Val His Pro Leu Asp Val Met Ala Asp Ala Arg Ala Leu Glu Arg Ala  
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 Cys Tyr Glu Glu Ser Leu Lys Ser Arg Pro Gly Thr Ala Ser Ser Ser  
 485 490 495  
 Gly Gly Ser Ile Ala Arg Gly Ala Pro Val Ile Val Pro Glu Leu Gly  
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 Lys Pro Arg Gln Ser Pro Leu Thr Tyr Glu Asp His Gly Ala Pro Phe  
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 Ala Gly His Leu Pro Arg Gly Ser Pro Val Thr Met Arg Glu Pro Thr  
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 Arg Lys Leu Thr Ser Thr Pro Arg Glu Ile Ala Lys Ser Pro His Ser  
 565 570 575  
 Thr Val Pro Glu His His Pro His Pro Ile Ser Pro Tyr Glu His Leu  
 580 585 590  
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 595 600 605  
 Ala Phe Asp Pro Thr Ser Ile Pro Arg Gly Ile Pro Leu Asp Ala Ala  
 610 615 620  
 Ala Ala Tyr Tyr Leu Pro Arg His Leu Ala Pro Asn Pro Thr Tyr Pro  
 625 630 635 640  
 His Leu Tyr Pro Pro Tyr Leu Ile Arg Gly Tyr Pro Asp Thr Ala Ala  
 645 650 655  
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 Met His His Asn Thr Ala Thr Ala Met Ala Gln Arg Ala Asp Met Leu  
 675 680 685  
 Arg Gly Leu Ser Pro Arg Glu Ser Ser Leu Ala Leu Asn Tyr Ala Ala  
 690 695 700  
 Gly Pro Arg Gly Ile Ile Asp Leu Ser Gln Val Pro His Leu Pro Val  
 705 710 715 720  
 Leu Val Pro Pro Thr Pro Gly Thr Pro Ala Thr Ala Met Asp Arg Leu  
 725 730 735

Ala Tyr Leu Pro Thr Ala Pro Gln Pro Phe Ser Ser Arg His Ser Ser  
 740 745 750  
 Ser Pro Leu Ser Pro Gly Gly Pro Thr His Leu Thr Lys Pro Thr Thr  
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 Thr Ser Ser Ser Glu Arg Glu Arg Asp Arg Asp Arg Glu Arg Asp Arg  
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 785 790 795 800  
 His Ala Pro Ile Trp Arg Pro Gly Thr Glu Gln Ser Ser Gly Ser Ser  
 805 810 815  
 Gly Ser Ser Gly Gly Gly Ser Ser Ser Arg Pro Ala Ser His  
 820 825 830  
 Ser His Ala His Gln His Ser Pro Ile Ser Pro Arg Thr Gln Asp Ala  
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 850 855 860  
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 Thr Ser Ser Pro Val Arg Pro Ala Ala Thr Phe Pro Pro Ala Thr His  
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 Ser Gly Leu Glu Pro Ala Ser Ser Pro Ser Lys Gly Ser Glu Pro Arg  
 945 950 955 960  
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 980 985 990  
 Pro Ala Ser Ala Ser Asp Pro His Arg Glu Lys Thr Gln Ser Lys Pro  
 995 1000 1005  
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 Ser Tyr Ser Pro Glu Gly Val Glu Pro Val Ser Pro Val Ser Ser Pro  
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 Ser Leu Thr His Asp Lys Gly Leu Pro Lys His Leu Glu Glu Leu Asp  
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 Lys Ser His Leu Glu Gly Glu Leu Arg Pro Lys Gln Pro Gly Pro Val  
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 Lys Leu Gly Gly Glu Ala Ala His Leu Pro His Leu Arg Pro Leu Pro  
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 Glu Ser Gln Pro Ser Ser Ser Pro Leu Leu Gln Thr Ala Pro Gly Val  
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 Lys Gly His Gln Arg Val Val Thr Leu Ala Gln His Ile Ser Glu Val  
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 Ile Thr Gln Asp Tyr Thr Arg His His Pro Gln Gln Leu Ser Ala Pro  
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 Leu Pro Ala Pro Leu Tyr Ser Phe Pro Gly Ala Ser Cys Pro Val Leu  
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 Asp Leu Arg Arg Pro Pro Ser Asp Leu Tyr Leu Pro Pro Pro Asp His  
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 Gly Ala Pro Ala Arg Gly Ser Pro His Ser Glu Gly Gly Lys Arg Ser  
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 Pro Glu Pro Asn Lys Thr Ser Val Leu Gly Gly Glu Asp Gly Ile  
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 Glu Pro Val Ser Pro Pro Glu Gly Met Thr Glu Pro Gly His Ser Arg  
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Ser Ala Val Tyr Pro Leu Leu Tyr Arg Asp Gly Glu Gln Thr Glu Pro  
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 Ser Arg Met Gly Ser Lys Ser Pro Gly Asn Thr Ser Gln Pro Pro Ala  
 1235 1240 1245  
 Phe Phe Ser Lys Leu Thr Glu Ser Asn Ser Ala Met Val Lys Ser Lys  
 1250 1255 1260  
 Lys Gln Glu Ile Asn Lys Lys Leu Asn Thr His Asn Arg Asn Glu Pro  
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 Glu Tyr Asn Ile Ser Gln Pro Gly Thr Glu Ile Phe Asn Met Pro Ala  
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 Ile Thr Gly Thr Gly Leu Met Thr Tyr Arg Ser Gln Ala Val Gln Glu  
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 His Ala Ser Thr Asn Met Gly Leu Glu Ala Ile Ile Arg Lys Ala Leu  
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 Met Gly Lys Tyr Asp Gln Trp Glu Glu Ser Pro Pro Leu Ser Ala Asn  
 1330 1335 1340  
 Ala Phe Asn Pro Leu Asn Ala Ser Ala Ser Leu Pro Ala Ala Met Pro  
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 Ile Thr Ala Ala Asp Gly Arg Ser Asp His Thr Leu Thr Ser Pro Gly  
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 Gly Gly Gly Lys Ala Lys Val Ser Gly Arg Pro Ser Ser Arg Lys Ala  
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 Lys Ser Pro Ala Pro Gly Leu Ala Ser Gly Asp Arg Pro Pro Ser Val  
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 Ser Ser Val His Ser Glu Gly Asp Cys Asn Arg Arg Thr Pro Leu Thr  
 1410 1415 1420  
 Asn Arg Val Trp Glu Asp Arg Pro Ser Ser Ala Gly Ser Thr Pro Phe  
 1425 1430 1435 1440  
 Pro Tyr Asn Pro Leu Ile Met Arg Leu Gln Ala Gly Tyr Met Ala Ser  
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 Pro Pro Pro Pro Gly Leu Pro Ala Gly Ser Gly Pro Leu Ala Gly Pro  
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 Glu Thr Leu Ser Asp Ser Glu  
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Pro Arg Tyr Pro Pro His Ser Leu Ser Tyr Pro Val Gln Ile Ala Arg  
20 25 30  
  
acg cac acg gac gtc ggg ctc ctg gag tac cag cac cac tcc cgc gac  
Thr His Thr Asp Val Gly Leu Leu Glu Tyr Gln His His Ser Arg Asp  
35 40 45  
  
tat gcc tcc cac ctg tcg ccg ggc tcc atc atc cag ccc cag cg<sup>g</sup> cgg  
Tyr Ala Ser His Leu Ser Pro Gly Ser Ile Ile Gln Pro Gln Arg Arg  
50 55 60  
  
agg ccc tcc ctg ctg tct gag ttc cag ccc ggg aat gaa cgg tcc cag  
Arg Pro Ser Leu Leu Ser Glu Phe Gln Pro Gly Asn Glu Arg Ser Gln  
65 70 75 80  
  
gag ctc cac ctg cgg cca gag tcc cac tca tac ctg ccc gag ctg ggg  
Glu Leu His Leu Arg Pro Glu Ser His Ser Tyr Leu Pro Glu Leu Gly  
85 90 95  
  
aag tca gag atg gag ttc att gaa agc aag cgc cct cgg cta gag ctg  
Lys Ser Glu Met Glu Phe Ile Glu Ser Lys Arg Pro Arg Leu Glu Leu  
100 105 110  
  
ctg cct gac ccc ctg ctg cga ccg tca ccc ctg ctg gcc acg ggc cag  
Leu Pro Asp Pro Leu Leu Arg Pro Ser Pro Leu Leu Ala Thr Gly Gln  
115 120 125  
  
cct gcg gga tct gaa gac ctc acc aag gac cgt agc ctg acg ggc aag  
Pro Ala Gly Ser Glu Asp Leu Thr Lys Asp Arg Ser Leu Thr Gly Lys  
130 135 140  
  
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Leu Glu Pro Val Ser Pro Pro Ser Pro Pro His Thr Asp Pro Glu Leu  
145 150 155 160  
  
gag ctg gtg ccg cca cgg ctg tcc aag gag gag ctg atc cag aac atg  
Glu Leu Val Pro Pro Arg Leu Ser Lys Glu Glu Leu Ile Gln Asn Met  
165 170 175  
  
gac cgc gtg gac cga gag atc acc atg gta gag cag cag atc tct aag  
Asp Arg Val Asp Arg Glu Ile Thr Met Val Glu Gln Gln Ile Ser Lys  
180 185 190  
  
ctg aag aag aag cag caa cag ctg gag gag gag gct gcc aag ccg ccc  
Leu Lys Lys Lys Gln Gln Leu Glu Glu Glu Ala Ala Lys Pro Pro  
195 200 205

gag cct gag aag ccc gtg tca ccg ccg ccc atc gag tcg aag cac cgc		673
Glu Pro Glu Lys Pro Val Ser Pro Pro Pro Ile Glu Ser Lys His Arg		
210 215 220		
agc ctg gtg cag atc atc tac gac gag aac ccg aag aag gct gaa gct		721
Ser Leu Val Gln Ile Ile Tyr Asp Glu Asn Arg Lys Lys Ala Glu Ala		
225 230 235 240		
gca cat ccg att ctg gaa ggc ctg ggg ccc cag gtg gag ctg ccg ctg		769
Ala His Arg Ile Leu Glu Gly Leu Gly Pro Gln Val Glu Leu Pro Leu		
245 250 255		
tac aac cag ccc tcc gac acc ccg cag tat cat gag aac atc aaa ata		817
Tyr Asn Gln Pro Ser Asp Thr Arg Gln Tyr His Glu Asn Ile Lys Ile		
260 265 270		
aac cag gcg atg ccg aag aag cta atc ttg tac ttc aag agg agg aat		865
Asn Gln Ala Met Arg Lys Lys Leu Ile Leu Tyr Phe Lys Arg Arg Asn		
275 280 285		
cac gct ccg aaa caa tgg aag cag aag ttc tgc cag ccg tat gac cag		913
His Ala Arg Lys Gln Trp Lys Gln Lys Phe Cys Gln Arg Tyr Asp Gln		
290 295 300		
ctc atg gag gcc ttg gaa aaa aag gtg gag ccg atc gaa aac aac ccg		961
Leu Met Glu Ala Leu Glu Lys Lys Val Glu Arg Ile Glu Asn Asn Pro		
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cgc ccg ccg gcc aag gag agc aag gtg ccg gag tac tac gaa aag cag		1009
Arg Arg Arg Ala Lys Glu Ser Lys Val Arg Glu Tyr Tyr Glu Lys Gln		
325 330 335		
ttc cct gag atc ccg aag cag ccg gag ctg cag gag ccg atg cag agc		1057
Phe Pro Glu Ile Arg Lys Gln Arg Glu Leu Gln Glu Arg Met Gln Ser		
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Arg Val Gly Gln Arg Gly Ser Gly Leu Ser Met Ser Ala Ala Arg Ser		
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gag cac gag gtg tca gag atc atc gat ggc ctc tca gag cag gag aac		1153
Glu His Glu Val Ser Glu Ile Ile Asp Gly Leu Ser Glu Gln Glu Asn		
370 375 380		
ctg gag aag cag atg ccg cag ctg gcc gtg atc ccg ccc atg ctg tac		1201
Leu Glu Lys Gln Met Arg Gln Leu Ala Val Ile Pro Pro Met Leu Tyr		
385 390 395 400		
gac gct gac cag ccg atc aag ttc atc aac atg aac ggg ctt atg		1249
Asp Ala Asp Gln Gln Arg Ile Lys Phe Ile Asn Met Asn Gly Leu Met		
405 410 415		
gcc gac ccc atg aag gtg tac aaa gac ccg cag gtc atg aac atg tgg		1297
Ala Asp Pro Met Lys Val Tyr Lys Asp Arg Gln Val Met Asn Met Trp		
420 425 430		
agt gag cag gag aag gag acc ttc ccg gag aag ttc atg cag cat ccc		1345
Ser Glu Gln Glu Lys Glu Thr Phe Arg Glu Lys Phe Met Gln His Pro		
435 440 445		

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gag tgc gtc ctc tat tac tac ctg act aag aag aat gag aac tat aag Glu Cys Val Leu Tyr Tyr Tyr Leu Thr Lys Lys Asn Glu Asn Tyr Lys 465 470 475 480	1441
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caa cag ccc atg Gln Gln Pro Met 500 505 510	1537
ccc cgc agc agc cag gag gag aaa gat gag aag gag aag gaa aag gag Pro Arg Ser Ser Gln Glu Glu Lys Asp Glu Lys Glu Lys Glu Lys Glu 515 520 525	1585
gcg gag aag gag gag aag ccg gag gtg gag aac gac aag gaa gac Ala Glu Lys Glu Glu Lys Pro Glu Val Glu Asn Asp Lys Glu Asp 530 535 540	1633
ctc ctc aag gag aag aca gac gac acc tca ggg gag gac aac gac gag Leu Leu Lys Glu Lys Thr Asp Asp Thr Ser Gly Glu Asp Asn Asp Glu 545 550 555 560	1681
aag gag gct gtg gcc tcc aaa ggc cgc aaa act gcc aac agc cag gga Lys Glu Ala Val Ala Ser Lys Gly Arg Lys Thr Ala Asn Ser Gln Gly 565 570 575	1729
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gag gag gcc atc acc ccc cag cag agc gcc gag ctg gcc tcc atg gag Glu Glu Ala Ile Thr Pro Gln Gln Ser Ala Glu Leu Ala Ser Met Glu 595 600 605	1825
ctg aat gag agt tct cgc tgg aca gaa gaa gaa atg gaa aca gcc aag Leu Asn Glu Ser Ser Arg Trp Thr Glu Glu Glu Met Glu Thr Ala Lys 610 615 620	1873
aaa ggt ctc ctg gaa cac ggc cgc aac tgg tcg gcc atc gcc cgg atg Lys Gly Leu Leu Glu His Gly Arg Asn Trp Ser Ala Ile Ala Arg Met 625 630 635 640	1921
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aag aag agg cag aac ctc gat gag atc ttg cag cag cac aag ctg aag Lys Lys Arg Gln Asn Leu Asp Glu Ile Leu Gln Gln His Lys Leu Lys 660 665 670	2017
atg gag aag gag agg aac gcg cgg agg aag aag aag aaa gcg ccg gcg Met Glu Lys Glu Arg Asn Ala Arg Arg Lys Lys Lys Lys Ala Pro Ala 675 680 685	2065

gct gaa gcc tta cat gcc tct ggg aat gag gtg ccc aca ggg gaa tgc		2209
Ala Glu Ala Leu His Ala Ser Gly Asn Glu Val Pro Arg Gly Glu Cys		
725 730 735		
agt ggc cca gcc act gtc aac aac agc tca gac acc gag agc atc ccc		2257
Ser Gly Pro Ala Thr Val Asn Asn Ser Ser Asp Thr Glu Ser Ile Pro		
740 745 750		
tct cct cac act gag gcc gcc aag gac aca ggg cag aat ggg ccc aag		2305
Ser Pro His Thr Glu Ala Ala Lys Asp Thr Gly Gln Asn Gly Pro Lys		
755 760 765		
ccc cca gcc acc ctg ggc gcc gac ggg cca ccc cca ggc cca ccc acc		2353
Pro Pro Ala Thr Leu Gly Ala Asp Gly Pro Pro Gly Pro Pro Thr		
770 775 780		
cca cca cgg agg aca tcc cgg gcc ccc att gag ccc acc ccc gac tct		2401
Pro Pro Arg Arg Thr Ser Arg Ala Pro Ile Glu Pro Thr Pro Ala Ser		
785 790 795 800		
gaa gcc acc gga gcc cct acg ccc cca cca gca ccc cca tcg ccc tct		2449
Glu Ala Thr Gly Ala Pro Thr Pro Pro Ala Pro Pro Ser Pro Ser		
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Ala Pro Pro Pro Val Val Pro Lys Glu Glu Lys Glu Glu Thr Ala		
820 825 830		
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Ala Ala Pro Pro Val Glu Glu Gly Glu Glu Gln Lys Pro Pro Ala Ala		
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Glu Cys Thr Glu Glu Ala Glu Glu Gly Pro Ala Lys Gly Lys Asp Ala		
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Glu Ala Ala Glu Ala Thr Ala Glu Gly Ala Leu Lys Ala Glu Lys Lys		
885 890 895		
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Glu Gly Gly Ser Gly Arg Ala Thr Thr Ala Lys Ser Ser Gly Ala Pro		
900 905 910		
cag gac agc gac tcc agt gct acc tgc agt gca gac gag gtg gat gag		2785
Gln Asp Ser Asp Ser Ser Ala Thr Cys Ser Ala Asp Glu Val Asp Glu		
915 920 925		

gcc gag ggc ggc gac aag aac cgg ctg ctg tcc cca agg ccc agc ctc Ala Glu Gly Gly Asp Lys Asn Arg Leu Leu Ser Pro Arg Pro Ser Leu 930 935 940	2833
ctc acc ccg act ggc gac ccc cgg gcc aat gcc tca ccc cag aag cca Leu Thr Pro Thr Gly Asp Pro Arg Ala Asn Ala Ser Pro Gln Lys Pro 945 950 955 960	2881
ctg gac ctg aag cag ctg aag cag cga gcg gct gcc atc ccc ccc atc Leu Asp Leu Lys Gln Leu Lys Gln Arg Ala Ala Ala Ile Pro Pro Ile 965 970 975	2929
cag gtc acc aaa gtc cat gag ccc ccc cgg gag gac gca gct ccc acc Gln Val Thr Lys Val His Glu Pro Pro Arg Glu Asp Ala Ala Pro Thr 980 985 990	2977
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agc gac gcc cct cag cag cct ggc agc agc ccc cgg ggc aag agc agg Ser Asp Ala Pro Gln Gln Pro Gly Ser Ser Pro Arg Gly Lys Ser Arg 1010 1015 1020	3073
agc ccg gca ccc ccc gcc gac aag gag gcc ttc gca gcc gag gcc cag Ser Pro Ala Pro Pro Ala Asp Lys Glu Ala Phe Ala Ala Glu Ala Gln 1025 1030 1035 1040	3121
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gtg ccc ccc cgt gag gtg atc aag gcc tcc ccc cat gcc ccc gac ccc Val Pro Pro Arg Glu Val Ile Lys Ala Ser Pro His Ala Pro Asp Pro 1060 1065 1070	3217
tca gcc ttc tcc tac gct cca cct ggt cac cca ctg ccc ctg ggc ctc Ser Ala Phe Ser Tyr Ala Pro Pro Gly His Pro Leu Pro Leu Gly Leu 1075 1080 1085	3265
cat gac act gcc cgg ccc gtc ctg ccc cgc cca ccc acc atc tcc aac His Asp Thr Ala Arg Pro Val Leu Pro Arg Pro Pro Thr Ile Ser Asn 1090 1095 1100	3313
ccg cct ccc ctc atc tcc tct gcc aag cac ccc agc gtc ctc gag agg Pro Pro Pro Leu Ile Ser Ser Ala Lys His Pro Ser Val Leu Glu Arg 1105 1110 1115 1120	3361
caa ata ggt gcc atc tcc caa gga atg tcg gtc cag ctc cac gtc ccc Gln Ile Gly Ala Ile Ser Gln Gly Met Ser Val Gln Leu His Val Pro 1125 1130 1135	3409
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ccc ctg ccc atg gac ccc aaa aag ctg gca ccc ttc agc gga gtg aag Pro Leu Pro Met Asp Pro Lys Lys Leu Ala Pro Phe Ser Gly Val Lys 1155 1160 1165	3505

cag gag cag ctg tcc cca cgg ggc cag gct ggg cca ccc gag agc ctg Gln Glu Gln Leu Ser Pro Arg Gly Gln Ala Gly Pro Pro Glu Ser Leu 1170 1175 1180	3553
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ggc tca gtt ccg ggc gga agc atc acc aaa ggc att ccc agc aca cgg Gly Ser Val Pro Gly Ser Ile Thr Lys Gly Ile Pro Ser Thr Arg 1205 1210 1215	3649
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acg cca gct gac gtc ctg tac aag ggc acc atc acc agg atc atc ggc Thr Pro Ala Asp Val Leu Tyr Lys Gly Thr Ile Arg Ile Ile Gly 1235 1240 1245	3745
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gag ggt ggc atg tct gtg acc cag tgc tcc aag gag gac ggc aga agc Glu Gly Gly Met Ser Val Thr Gln Cys Ser Lys Glu Asp Gly Arg Ser 1285 1290 1295	3889
agc tca gga ccc ccc cat gag acg gcc gcc ccc aag cgc acc tat gac Ser Ser Gly Pro Pro His Glu Thr Ala Ala Pro Lys Arg Thr Tyr Asp 1300 1305 1310	3937
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ctc aaa gag cag cac cac atc cgc ggg tcc atc aca caa ggg atc cct Leu Lys Glu Gln His His Ile Arg Gly Ser Ile Thr Gln Gly Ile Pro 1345 1350 1355 1360	4081
cgg tcc tac gtg gag gca cag gag gac tac ctg cgt cgg gag gcc aag Arg Ser Tyr Val Glu Ala Gln Glu Asp Tyr Leu Arg Arg Glu Ala Lys 1365 1370 1375	4129
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ctg acc gag gcc tac aag acg cag gcc ctg ggc ccc ctg aag ctg aag Leu Thr Glu Ala Tyr Lys Thr Gln Ala Leu Gly Pro Leu Lys Leu Lys 1395 1400 1405	4225

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ctg gcc ccg cgg ccg ctc aag gag ggc tcc atc acg cag ggc acc ccg Leu Ala Pro Arg Pro Leu Lys Glu Gly Ser Ile Thr Gln Gly Thr Pro 1445 1450 1455	4369
ctc aag tac gac acc ggc gcg tcc acc act ggc tcc aaa aag cac gac Leu Lys Tyr Asp Thr Gly Ala Ser Thr Thr Gly Ser Lys Lys His Asp 1460 1465 1470	4417
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ccg ctg gat gtg atg gcc gac ggc cgg gca ctg gaa cgt gcc tgc tac Pro Leu Asp Val Met Ala Asp Ala Arg Ala Leu Glu Arg Ala Cys Tyr 1490 1495 1500	4513
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cg <sup>o</sup> g cag agc ccc ctg acc tat gag gac cac ggg gca ccc ttt gcc ggc Arg Gln Ser Pro Leu Thr Tyr Glu Asp His Gly Ala Pro Phe Ala Gly 1540 1545 1550	4657
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cag aga ccc agt gtg ctt cac aac aca ggc atg aag ggt atc atc acc Gln Arg Pro Ser Val Leu His Asn Thr Gly Met Lys Gly Ile Ile Thr 1875 1880 1885	5665

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2515	
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&lt;210&gt; 5

&lt;211&gt; 2517

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 Pro Arg Tyr Pro Pro His Ser Leu Ser Tyr Pro Val Gln Ile Ala Arg  
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 Thr His Thr Asp Val Gly Leu Leu Glu Tyr Gln His His Ser Arg Asp  
 35 40 45  
 Tyr Ala Ser His Leu Ser Pro Gly Ser Ile Ile Gln Pro Gln Arg Arg  
 50 55 60  
 Arg Pro Ser Leu Leu Ser Glu Phe Gln Pro Gly Asn Glu Arg Ser Gln  
 65 70 75 80  
 Glu Leu His Leu Arg Pro Glu Ser His Ser Tyr Leu Pro Glu Leu Gly  
 85 90 95  
 Lys Ser Glu Met Glu Phe Ile Glu Ser Lys Arg Pro Arg Leu Glu Leu  
 100 105 110  
 Leu Pro Asp Pro Leu Leu Arg Pro Ser Pro Leu Leu Ala Thr Gly Gln  
 115 120 125  
 Pro Ala Gly Ser Glu Asp Leu Thr Lys Asp Arg Ser Leu Thr Gly Lys  
 130 135 140  
 Leu Glu Pro Val Ser Pro Pro Ser Pro His Thr Asp Pro Glu Leu  
 145 150 155 160  
 Glu Leu Val Pro Pro Arg Leu Ser Lys Glu Glu Leu Ile Gln Asn Met  
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 Asp Arg Val Asp Arg Glu Ile Thr Met Val Glu Gln Gln Ile Ser Lys  
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 Leu Lys Lys Lys Gln Gln Gln Leu Glu Glu Ala Ala Lys Pro Pro  
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 Glu Pro Glu Lys Pro Val Ser Pro Pro Ile Glu Ser Lys His Arg  
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 Ser Leu Val Gln Ile Ile Tyr Asp Glu Asn Arg Lys Lys Ala Glu Ala  
 225 230 235 240  
 Ala His Arg Ile Leu Glu Gly Leu Gly Pro Gln Val Glu Leu Pro Leu  
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 Tyr Asn Gln Pro Ser Asp Thr Arg Gln Tyr His Glu Asn Ile Lys Ile  
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 Asn Gln Ala Met Arg Lys Lys Leu Ile Leu Tyr Phe Lys Arg Arg Asn  
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 His Ala Arg Lys Gln Trp Lys Gln Lys Phe Cys Gln Arg Tyr Asp Gln  
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 Glu His Glu Val Ser Glu Ile Ile Asp Gly Leu Ser Glu Gln Glu Asn  
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 Asp Ala Asp Gln Gln Arg Ile Lys Phe Ile Asn Met Asn Gly Leu Met  
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 Ala Asp Pro Met Lys Val Tyr Lys Asp Arg Gln Val Met Asn Met Trp  
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 Ser Glu Gln Glu Lys Glu Thr Phe Arg Glu Lys Phe Met Gln His Pro  
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Lys Asn Phe Gly Leu Ile Ala Ser Phe Leu Glu Arg Lys Thr Val Ala  
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 Glu Cys Val Leu Tyr Tyr Tyr Leu Thr Lys Lys Asn Glu Asn Tyr Lys  
 465 470 475 480  
 Ser Leu Val Arg Arg Ser Tyr Arg Arg Arg Gly Lys Ser Gln Gln Gln  
 485 490 495  
 Gln Pro Met  
 500 505 510  
 Pro Arg Ser Ser Gln Glu Glu Lys Asp Glu Lys Glu Lys Glu Lys Glu  
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 Ala Glu Lys Glu Glu Glu Lys Pro Glu Val Glu Asn Asp Lys Glu Asp  
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 Glu Gly Gly Ser Gly Arg Ala Thr Thr Ala Lys Ser Ser Gly Ala Pro  
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 Gln Asp Ser Asp Ser Ser Ala Thr Cys Ser Ala Asp Glu Val Asp Glu  
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Ala Glu Gly Gly Asp Lys Asn Arg Leu Leu Ser Pro Arg Pro Ser Leu  
 930 935 940  
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 945 950 955 960  
 Leu Asp Leu Lys Gln Leu Lys Gln Arg Ala Ala Ala Ile Pro Pro Ile  
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 Gln Val Thr Lys Val His Glu Pro Pro Arg Glu Asp Ala Ala Pro Thr  
 980 985 990  
 Lys Pro Ala Pro Pro Ala Pro Pro Pro Gln Asn Leu Gln Pro Glu  
 995 1000 1005  
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 Pro Pro Pro Leu Ile Ser Ser Ala Lys His Pro Ser Val Leu Glu Arg  
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Pro Ala His Glu Gly Leu Val Ala Thr Val Lys Glu Ala Gly Arg Ser  
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 Tyr Pro Val Gln Ile Ala Arg Ser His Thr Asp Val Gly Leu Leu Glu  
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 Tyr Gln His His Pro Arg Asp Tyr Thr Ser His Leu Ser Pro Gly Ser  
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285 290 295	

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Lys Glu Glu Leu Ser Lys Glu Lys Thr Asp Asp Thr Ser Gly Glu Asp		
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Asn His Glu Lys Glu Ala Val Ala Ser Lys Gly Arg Lys Thr Ala Asn		
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Ser Met Glu Met Asn Glu Ser Ser Arg Trp Thr Glu Glu Met Glu		
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Thr Ala Lys Lys Gly Leu Leu Glu His Gly Arg Asn Trp Ser Ala Ile		
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Phe Asn Tyr Lys Lys Arg Gln Asn Leu Asp Glu Ile Leu Gln Gln His		
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Lys Leu Lys Met Glu Lys Glu Arg Asn Ala Arg Arg Lys Lys Lys Lys		
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Asp Glu Glu Met Glu Ala Ser Gly Ala Ser Ala Asn Glu Glu Glu Leu		
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Ala Glu Glu Ala Glu Ala Ser Gln Ala Ser Gly Asn Glu Val Pro Arg		
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Val Gly Glu Cys Ser Gly Pro Ala Ala Val Asn Asn Ser Ser Asp Thr		
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Lys Pro Thr Gly Thr Glu Ala Leu Pro Ala Ala Thr Gln Pro Pro Val		
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Pro Ile Ser Pro Tyr Glu His Leu Leu Arg Gly Val Thr Gly Val Asp	
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ctg tac cgt ggt cac atc cca ttg gcc ttt gac ccc acc tcc ata ccc	5452
Leu Tyr Arg Gly His Ile Pro Leu Ala Phe Asp Pro Thr Ser Ile Pro	
1595 1600 1605	
cga ggg atc cct ctg gaa gca gca gca gca gca tac tac ctg ccc cgg	5500
Arg Gly Ile Pro Leu Glu Ala Ala Ala Ala Tyr Tyr Leu Pro Arg	
1610 1615 1620 1625	
cac ttg gcc ccc agc ccc acc tac cca cac ctg tac cca cct tac ctc	5548
His Leu Ala Pro Ser Pro Thr Tyr Pro His Leu Tyr Pro Pro Tyr Leu	
1630 1635 1640	
atc cgc ggc tac cct gac acg gcg gcc ctg gag aac cgc cag acc atc	5596
Ile Arg Gly Tyr Pro Asp Thr Ala Ala Leu Glu Asn Arg Gln Thr Ile	
1645 1650 1655	
atc aat gac tac atc acc tcg cag cag atg cac cac aac gct gcc tcc	5644
Ile Asn Asp Tyr Ile Thr Ser Gln Gln Met His His Asn Ala Ala Ser	
1660 1665 1670	
gcc atg gcc cag cgt gct gac atg ctg agg ggt ctg tca ccg cga gag	5692
Ala Met Ala Gln Arg Ala Asp Met Leu Arg Gly Leu Ser Pro Arg Glu	
1675 1680 1685	
tcc tcg ctg gcc ctc aat tat gcc gct ggc cca aga ggc att atc gac	5740
Ser Ser Leu Ala Leu Asn Tyr Ala Ala Gly Pro Arg Gly Ile Ile Asp	
1690 1695 1700 1705	
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Leu Ser Gln Val Pro His Leu Pro Val Leu Val Pro Pro Thr Pro Gly	
1710 1715 1720	
acc cct gcc acc gcc atc gac cgc ctt gcc tac ctc ccc act gcg ccc	5836
Thr Pro Ala Thr Ala Ile Asp Arg Leu Ala Tyr Leu Pro Thr Ala Pro	
1725 1730 1735	

cca ccc ttc agc agc cgc cac agt agc tca ccg ctg tcc cca gga ggc Pro Pro Phe Ser Ser Arg His Ser Ser Ser Pro Leu Ser Pro Gly Gly 1740 1745 1750	5884
ccc act cac cta gct aaa cca act gcc aca tct tca tcg gag cgg gaa Pro Thr His Leu Ala Lys Pro Thr Ala Thr Ser Ser Ser Glu Arg Glu 1755 1760 1765	5932
cgg gaa cgt gag cgg gaa cga gac aag tcc atc ctc acg tct acc act Arg Glu Arg Glu Arg Asp Lys Ser Ile Leu Thr Ser Thr Thr 1770 1775 1780 1785	5980
aca gtg gag cat gca ccc atc tgg aga cct ggt acg gag cag agc agc Thr Val Glu His Ala Pro Ile Trp Arg Pro Gly Thr Glu Gln Ser Ser 1790 1795 1800	6028
ggg gct ggg ggc agc agc cgc ccc gcc tcc cac acc cac cag cac tcg Gly Ala Gly Gly Ser Ser Arg Pro Ala Ser His Thr His Gln His Ser 1805 1810 1815	6076
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ctg cac aac acg agc atg aag ggc gtg gtc acc tcc gtg gaa ccc ggc Leu His Asn Thr Ser Met Lys Gly Val Val Thr Ser Val Glu Pro Gly 1835 1840 1845	6172
acg ccc acg gtc ctg agg tgg gcc agg tcc acc tcc acc tct tcg cct Thr Pro Thr Val Leu Arg Trp Ala Arg Ser Thr Ser Thr Ser Pro 1850 1855 1860 1865	6220
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ggc acc ctt gaa ggg gtc tac cct acc ctc atg gag ccc gtc ctg tta Gly Thr Leu Glu Gly Val Tyr Pro Thr Leu Met Glu Pro Val Leu Leu 1885 1890 1895	6316
ccc aag gag acc tct cgg gtc gcc cgg ccc gag cgg gcc cgg gtg gac Pro Lys Glu Thr Ser Arg Val Ala Arg Pro Glu Arg Ala Arg Val Asp 1900 1905 1910	6364
gct ggc cat gcc ttt ctt acc aaa ccc ccg ggc cgg gag ccc gcc tcc Ala Gly His Ala Phe Leu Thr Lys Pro Pro Gly Arg Glu Pro Ala Ser 1915 1920 1925	6412
tca ccc agc aag agc tcc gag ccc cga tcc cta gca ccc ccc agc tcc Ser Pro Ser Lys Ser Ser Glu Pro Arg Ser Leu Ala Pro Pro Ser Ser 1930 1935 1940 1945	6460
agc cac aca gcc atc gcc cgc acc cca gca aag aac ctt gca ccc cac Ser His Thr Ala Ile Ala Arg Thr Pro Ala Lys Asn Leu Ala Pro His 1950 1955 1960	6508
cat gcc agt ccg gac ccg ccg gcg ccc acc tcg gcc tca gat ctg cac His Ala Ser Pro Asp Pro Pro Ala Pro Thr Ser Ala Ser Asp Leu His 1965 1970 1975	6556

cga gaa aag actcaa agt aaa ccc ttt tcc atc cag gaa ttg gaa ctc Arg Glu Lys Thr Gln Ser Lys Pro Phe Ser Ile Gln Glu Leu Glu Leu 1980 1985 1990	6604
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ctc tcc aaa cct ctg gaa gag cta gag aag agc cac ttg gaa ggg gag Leu Ser Lys Pro Leu Glu Leu Glu Lys Ser His Leu Glu Gly Glu 2030 2035 2040	6748
ctg cgg cac aag cag cca ggc ccc atg aag ctc agc gcg gag gct gcc Leu Arg His Lys Gln Pro Gly Pro Met Lys Leu Ser Ala Glu Ala Ala 2045 2050 2055	6796
cat ctc cca cat ctg cgg cca ctg ccc gag agc cag ccc tca tcc agc His Leu Pro His Leu Arg Pro Leu Pro Glu Ser Gln Pro Ser Ser Ser 2060 2065 2070	6844
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acc ctg gct cag cac atc agc gag gtc att acg cag gac tac acg cgc Thr Leu Ala Gln His Ile Ser Glu Val Ile Thr Gln Asp Tyr Thr Arg 2090 2095 2100 2105	6940
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ttt ccc gga gcc agc tgc cct gtc ctg gat ctt cgc cgc cca ccc agt Phe Pro Gly Ala Ser Cys Pro Val Leu Asp Leu Arg Arg Pro Pro Ser 2125 2130 2135	7036
gac ctc tac ctc cca ccc ccc gac cat ggc acc cca gcc cg gga tcc Asp Leu Tyr Leu Pro Pro Asp His Gly Thr Pro Ala Arg Gly Ser 2140 2145 2150	7084
ccc cac agt gaa ggg ggc aaa agg tcc cca gaa ccc agc aaa aca tcg Pro His Ser Glu Gly Gly Lys Arg Ser Pro Glu Pro Ser Lys Thr Ser 2155 2160 2165	7132
gtc ctg ggc agc agc gag gat gcc att gag cct gtg tcc cca cca gag Val Leu Gly Ser Ser Glu Asp Ala Ile Glu Pro Val Ser Pro Pro Glu 2170 2175 2180 2185	7180
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ggc aac acc agc cag ccg cca acc ttc ttc agt aag ctg act gag agc Gly Asn Thr Ser Gln Pro Pro Thr Phe Phe Ser Lys Leu Thr Glu Ser 2220 2225 2230	7324
aac tcc gcc atg gtg aag tcg aag aag cag gag atc aac aag aaa ctc Asn Ser Ala Met Val Lys Ser Lys Lys Gln Glu Ile Asn Lys Lys Leu 2235 2240 2245	7372
aac acc cac aac cgg aac gag cca gaa tac aat att ggc cag cct ggg Asn Thr His Asn Arg Asn Glu Pro Glu Tyr Asn Ile Gly Gln Pro Gly 2250 2255 2260 2265	7420
acg gaa atc ttc aac atg ccc gcc atc act gga gca ggc ctt atg acc Thr Glu Ile Phe Asn Met Pro Ala Ile Thr Gly Ala Gly Leu Met Thr 2270 2275 2280	7468
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gcc agt ctg ccc gct gct atg ccc ata acc act gct gac gga cgg Ala Ser Leu Pro Ala Ala Met Pro Ile Thr Thr Ala Asp Gly Arg 2330 2335 2340 2345	7660
agt gac cac gca ctc acc tcg cca ggt gga ggt ggg aaa gcc aag gtc Ser Asp His Ala Leu Thr Ser Pro Gly Gly Gly Lys Ala Lys Val 2350 2355 2360	7708
tct ggc aga cct agc agc cga aaa gcc aag tcg cca gca cca ggc cta Ser Gly Arg Pro Ser Ser Arg Lys Ala Lys Ser Pro Ala Pro Gly Leu 2365 2370 2375	7756
gcg tcc gga gac cga ccc cct tct gtc tcc tca gta cac tca gag ggg Ala Ser Gly Asp Arg Pro Pro Ser Val Ser Ser Val His Ser Glu Gly 2380 2385 2390	7804
gac tgc aat cgc cga aca cca ctc acc aac cgt gtg tgg gag gac cgg Asp Cys Asn Arg Arg Thr Pro Leu Thr Asn Arg Val Trp Glu Asp Arg 2395 2400 2405	7852
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gca ggc agc ggg ccc cta gct ggt ccc cac cac gcc tgg gat gag gag Ala Gly Ser Gly Pro Leu Ala Gly Pro His His Ala Trp Asp Glu Glu 2445 2450 2455	7996

ccc aag cca ctg ctg tgt tca cag tat gag aca ctc tcg gac agc gag	8044
Pro Lys Pro Leu Leu Cys Ser Gln Tyr Glu Thr Leu Ser Asp Ser Glu	
2460 2465 2470	
tga ccacggattg ggggggagcg gtgccaggc ccgcacaagg cagaaggcagc	8097
*	
ccagcatgga gcagacagct gctgactccc gagactgagg aaggagcccc tgagtctgcc	8157
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<213> Mus musculus	
<400> 7	
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Pro Arg Tyr Pro Pro His Gly Ile Ser Tyr Pro Val Gln Ile Ala Arg	
20 25 30	
Ser His Thr Asp Val Gly Leu Leu Glu Tyr Gln His His Pro Arg Asp	
35 40 45	
Tyr Thr Ser His Leu Ser Pro Gly Ser Ile Ile Gln Pro Gln Arg Arg	
50 55 60	
Arg Pro Ser Leu Leu Ser Glu Phe Gln Pro Gly Ser Glu Arg Ser Gln	
65 70 75 80	
Glu Leu His Leu Arg Pro Glu Ser Arg Thr Phe Leu Pro Glu Leu Gly	
85 90 95	
Lys Pro Asp Ile Glu Phe Thr Glu Ser Lys Arg Pro Arg Leu Glu Leu	
100 105 110	
Leu Pro Asp Thr Leu Leu Arg Pro Ser Pro Leu Leu Ala Thr Gly Gln	
115 120 125	
Pro Ser Gly Ser Glu Asp Leu Thr Lys Asp Arg Ser Leu Ala Gly Lys	
130 135 140	
Leu Glu Pro Val Ser Pro Pro Ser Pro His Ala Asp Pro Glu Leu	
145 150 155 160	
Glu Leu Ala Pro Ser Arg Leu Ser Lys Glu Glu Leu Ile Gln Asn Met	
165 170 175	
Asp Arg Val Asp Arg Glu Ile Thr Met Val Glu Gln Gln Ile Ser Lys	
180 185 190	
Leu Lys Lys Lys Gln Gln Gln Leu Glu Glu Ala Ala Lys Pro Pro	
195 200 205	
Glu Pro Glu Lys Pro Val Ser Pro Pro Pro Ile Glu Ser Lys His Arg	
210 215 220	
Ser Leu Val Gln Ile Ile Tyr Asp Glu Asn Arg Lys Lys Ala Glu Ala	
225 230 235 240	
Ala His Arg Ile Leu Glu Gly Leu Gly Pro Gln Val Glu Leu Pro Leu	
245 250 255	
Tyr Asn Gln Pro Ser Asp Thr Arg Gln Tyr His Glu Asn Ile Lys Ile	
260 265 270	
Asn Gln Ala Met Arg Lys Lys Leu Ile Leu Tyr Phe Lys Arg Arg Asn	
275 280 285	
His Ala Arg Lys Gln Trp Glu Gln Arg Phe Cys Gln Arg Tyr Asp Gln	
290 295 300	
Leu Met Glu Ala Trp Glu Lys Lys Val Glu Arg Ile Glu Asn Asn Pro	

305	310	315	320
Arg Arg Arg Ala Lys Glu Ser Lys Val Arg Glu Tyr Tyr Glu Lys Gln			
325	330	335	
Phe Pro Glu Ile Arg Lys Gln Arg Glu Leu Gln Glu Arg Met Gln Ser			
340	345	350	
Arg Val Gly Gln Arg Gly Ser Gly Leu Ser Met Ser Ala Ala Arg Ser			
355	360	365	
Glu His Glu Val Ser Glu Ile Ile Asp Gly Leu Ser Glu Gln Glu Asn			
370	375	380	
Leu Glu Lys Gln Met Arg Gln Leu Ala Val Ile Pro Pro Met Leu Tyr			
385	390	395	400
Asp Ala Asp Gln Gln Arg Ile Lys Phe Ile Asn Met Asn Gly Leu Met			
405	410	415	
Asp Asp Pro Met Lys Val Tyr Lys Asp Arg Gln Val Thr Asn Met Trp			
420	425	430	
Ser Glu Gln Glu Arg Asp Thr Phe Arg Glu Lys Phe Met Gln His Pro			
435	440	445	
Lys Asn Phe Gly Leu Ile Ala Ser Phe Leu Glu Arg Lys Thr Val Ala			
450	455	460	
Glu Cys Val Leu Tyr Tyr Leu Thr Lys Lys Asn Glu Asn Tyr Lys			
465	470	475	480
Ser Leu Val Arg Arg Ser Tyr Arg Arg Gly Lys Ser Gln Gln Gln			
485	490	495	
Gln Gln Gln Gln Gln Gln Gln Gln Gln Met Ala Arg Ser Ser			
500	505	510	
Gln Glu Glu Lys Glu Glu Lys Glu Lys Glu Ala Asp Lys Glu			
515	520	525	
Glu Glu Lys Gln Asp Ala Glu Asn Glu Lys Glu Glu Leu Ser Lys Glu			
530	535	540	
Lys Thr Asp Asp Thr Ser Gly Glu Asp Asn His Glu Lys Glu Ala Val			
545	550	555	560
Ala Ser Lys Gly Arg Lys Thr Ala Asn Ser Gln Gly Arg Arg Lys Gly			
565	570	575	
Arg Ile Thr Arg Ser Met Ala Asn Glu Ala Asn His Glu Glu Thr Ala			
580	585	590	
Thr Pro Gln Gln Ser Ser Glu Leu Ala Ser Met Glu Met Asn Glu Ser			
595	600	605	
Ser Arg Trp Thr Glu Glu Glu Met Glu Thr Ala Lys Lys Gly Leu Leu			
610	615	620	
Glu His Gly Arg Asn Trp Ser Ala Ile Ala Arg Met Val Gly Ser Lys			
625	630	635	640
Thr Val Ser Gln Cys Lys Asn Phe Tyr Phe Asn Tyr Lys Lys Arg Gln			
645	650	655	
Asn Leu Asp Glu Ile Leu Gln Gln His Lys Leu Lys Met Glu Lys Glu			
660	665	670	
Arg Asn Ala Arg Arg Lys Lys Lys Thr Pro Ala Ala Ala Ser Glu			
675	680	685	
Glu Thr Ala Phe Pro Pro Ala Ala Glu Asp Glu Glu Met Glu Ala Ser			
690	695	700	
Gly Ala Ser Ala Asn Glu Glu Glu Leu Ala Glu Glu Ala Glu Ala Ser			
705	710	715	720
Gln Ala Ser Gly Asn Glu Val Pro Arg Val Gly Glu Cys Ser Gly Pro			
725	730	735	
Ala Ala Val Asn Asn Ser Ser Asp Thr Glu Ser Val Pro Ser Pro Arg			
740	745	750	
Ser Glu Ala Met Lys Asp Thr Gly Pro Lys Pro Thr Gly Thr Glu Ala			
755	760	765	
Leu Pro Ala Ala Thr Gln Pro Pro Val Pro Pro Pro Glu Glu Pro Ala			
770	775	780	
Val Ala Pro Ala Glu Pro Ser Pro Val Pro Asp Ala Ser Gly Pro Pro			

785	790	795	800
Ser Pro Glu Pro Ser His His Leu Pro His Pro Arg Leu Leu Trp Thr			
805	810	815	
Arg Met Asn Lys Lys Pro Arg Leu Leu Gln Leu Pro Arg Gln Arg Met			
820	825	830	
Pro Arg Ser Arg Ser Leu Arg Pro Arg Arg Ser Met Trp Glu Lys Pro			
835	840	845	
Glu Glu Pro Glu Ala Ser Glu Glu Pro Pro Glu Ser Val Lys Ser Asp			
850	855	860	
His Lys Glu Glu Thr Glu Glu Pro Glu Asp Lys Ala Lys Gly Thr			
865	870	875	880
Glu Ala Ile Glu Thr Val Ser Glu Ala Pro Leu Lys Val Glu Glu Ala			
885	890	895	
Gly Ser Lys Ala Ala Val Thr Lys Gly Ser Ser Ser Gly Ala Thr Gln			
900	905	910	
Asp Ser Asp Phe Ser Ala Thr Cys Ser Ala Asp Glu Val Asp Glu Pro			
915	920	925	
Glu Gly Gly Asp Lys Gly Arg Leu Leu Ser Pro Arg Pro Ser Leu Leu			
930	935	940	
Thr Pro Ala Gly Asp Pro Arg Ala Ser Thr Ser Pro Gln Lys Pro Leu			
945	950	955	960
Asp Leu Lys Gln Leu Lys Gln Arg Ala Ala Ile Pro Pro Ile Gln			
965	970	975	
Val Thr Lys Val His Glu Pro Pro Arg Glu Asp Thr Val Pro Pro Lys			
980	985	990	
Pro Val Pro Pro Val Pro Pro Pro Thr Gln His Leu Gln Pro Glu Gly			
995	1000	1005	
Asp Val Ser Gln Gln Ser Gly Gly Ser Pro Arg Gly Lys Ser Arg Ser			
1010	1015	1020	
Pro Val Pro Pro Ala Glu Lys Glu Ala Glu Lys Pro Ala Phe Phe Pro			
1025	1030	1035	1040
Ala Phe Pro Thr Glu Gly Pro Lys Leu Pro Thr Glu Pro Pro Arg Trp			
1045	1050	1055	
Ser Ser Gly Leu Pro Phe Pro Ile Pro Pro Arg Glu Val Ile Lys Thr			
1060	1065	1070	
Ser Pro His Ala Ala Asp Pro Ser Ala Phe Ser Tyr Thr Pro Pro Gly			
1075	1080	1085	
His Pro Leu Pro Leu Gly Leu His Asp Ser Ala Arg Pro Val Leu Pro			
1090	1095	1100	
Arg Pro Pro Ile Ser Asn Pro Pro Pro Leu Ile Ser Ser Ala Lys His			
1105	1110	1115	1120
Pro Gly Val Leu Glu Arg Gln Leu Gly Ala Ile Ser Gln Gln Gly Met			
1125	1130	1135	
Ser Val Gln Leu Arg Val Pro His Ser Glu His Ala Lys Ala Pro Met			
1140	1145	1150	
Gly Pro Leu Thr Met Gly Leu Pro Leu Ala Val Asp Pro Lys Lys Leu			
1155	1160	1165	
Gly Thr Ala Leu Gly Ser Ala Thr Ser Gly Ser Ile Thr Lys Gly Leu			
1170	1175	1180	
Pro Ser Thr Arg Ala Ala Asp Gly Pro Ser Tyr Arg Gly Ser Ile Thr			
1185	1190	1195	1200
His Gly Thr Pro Ala Asp Val Leu Tyr Lys Gly Thr Ile Ser Arg Ile			
1205	1210	1215	
Val Gly Glu Asp Ser Pro Ser Arg Leu Asp Arg Ala Arg Glu Asp Thr			
1220	1225	1230	
Leu Pro Lys Gly His Val Ile Tyr Glu Gly Lys Lys Gly His Val Leu			
1235	1240	1245	
Ser Tyr Glu Gly Gly Met Ser Val Ser Gln Cys Ser Lys Glu Asp Gly			
1250	1255	1260	
Arg Ser Ser Ser Gly Pro Pro His Glu Thr Ala Ala Pro Lys Arg Thr			

1265	1270	1275	1280
Tyr Asp Met Met Glu Gly Arg Val Gly Arg Thr Val Thr Ser Ala Ser			
1285	1290	1295	
Ile Glu Gly Leu Met Gly Arg Ala Ile Pro Glu Gln His Ser Pro His			
1300	1305	1310	
Leu Lys Glu Gln His His Ile Arg Gly Ser Ile Thr Gln Gly Ile Pro			
1315	1320	1325	
Arg Ser Tyr Val Glu Ala Gln Glu Asp Tyr Leu Arg Arg Glu Ala Lys			
1330	1335	1340	
Leu Leu Lys Arg Glu Gly Thr Pro Pro Pro Pro Pro Pro Arg Asp			
1345	1350	1355	1360
Leu Thr Glu Thr Tyr Lys Pro Arg Pro Leu Asp Pro Leu Gly Pro Leu			
1365	1370	1375	
Lys Leu Lys Pro Thr His Glu Gly Val Val Ala Thr Val Lys Glu Ala			
1380	1385	1390	
Gly Arg Ser Ile His Glu Ile Pro Arg Glu Glu Leu Arg Arg Thr Pro			
1395	1400	1405	
Glu Leu Pro Leu Ala Pro Arg Pro Leu Lys Glu Gly Ser Ile Thr Gln			
1410	1415	1420	
Gly Thr Pro Leu Lys Tyr Asp Ser Gly Ala Pro Ser Thr Gly Thr Lys			
1425	1430	1435	1440
Lys His Asp Val Arg Ser Ile Ile Gly Ser Pro Gly Arg Pro Phe Pro			
1445	1450	1455	
Ala Leu His Pro Leu Asp Ile Met Ala Asp Ala Arg Ala Leu Glu Arg			
1460	1465	1470	
Ala Cys Tyr Glu Glu Ser Leu Lys Ser Arg Ser Gly Thr Ser Ser Gly			
1475	1480	1485	
Ala Gly Gly Ser Ile Thr Arg Gly Ala Pro Val Val Pro Glu Leu			
1490	1495	1500	
Gly Lys Pro Arg Gln Ser Pro Leu Thr Tyr Glu Asp His Gly Ala Pro			
1505	1510	1515	1520
Phe Thr Ser His Leu Pro Arg Gly Ser Pro Val Thr Thr Arg Glu Pro			
1525	1530	1535	
Thr Pro Arg Leu Gln Glu Gly Ser Leu Leu Ser Ser Lys Ala Ser Gln			
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Asp Arg Lys Leu Thr Ser Thr Pro Arg Glu Ile Ala Lys Ser Pro His			
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Ser Thr Val Pro Glu His His Pro His Pro Ile Ser Pro Tyr Glu His			
1570	1575	1580	
Leu Leu Arg Gly Val Thr Gly Val Asp Leu Tyr Arg Gly His Ile Pro			
1585	1590	1595	1600
Leu Ala Phe Asp Pro Thr Ser Ile Pro Arg Gly Ile Pro Leu Glu Ala			
1605	1610	1615	
Ala Ala Ala Ala Tyr Tyr Leu Pro Arg His Leu Ala Pro Ser Pro Thr			
1620	1625	1630	
Tyr Pro His Leu Tyr Pro Pro Tyr Leu Ile Arg Gly Tyr Pro Asp Thr			
1635	1640	1645	
Ala Ala Leu Glu Asn Arg Gln Thr Ile Ile Asn Asp Tyr Ile Thr Ser			
1650	1655	1660	
Gln Gln Met His His Asn Ala Ala Ser Ala Met Ala Gln Arg Ala Asp			
1665	1670	1675	1680
Met Leu Arg Gly Leu Ser Pro Arg Glu Ser Ser Leu Ala Leu Asn Tyr			
1685	1690	1695	
Ala Ala Gly Pro Arg Gly Ile Ile Asp Leu Ser Gln Val Pro His Leu			
1700	1705	1710	
Pro Val Leu Val Pro Pro Thr Pro Gly Thr Pro Ala Thr Ala Ile Asp			
1715	1720	1725	
Arg Leu Ala Tyr Leu Pro Thr Ala Pro Pro Pro Phe Ser Ser Arg His			
1730	1735	1740	
Ser Ser Ser Pro Leu Ser Pro Gly Gly Pro Thr His Leu Ala Lys Pro			

1745	1750	1755	1760
Thr Ala Thr Ser Ser Ser Glu Arg Glu Arg Glu Arg Glu Arg			
1765	1770	1775	
Asp Lys Ser Ile Leu Thr Ser Thr Thr Val Glu His Ala Pro Ile			
1780	1785	1790	
Trp Arg Pro Gly Thr Glu Gln Ser Ser Gly Ala Gly Gly Ser Ser Arg			
1795	1800	1805	
Pro Ala Ser His Thr His Gln His Ser Pro Ile Ser Pro Arg Thr Gln			
1810	1815	1820	
Asp Ala Leu Gln Gln Arg Pro Ser Val Leu His Asn Thr Ser Met Lys			
1825	1830	1835	1840
Gly Val Val Thr Ser Val Glu Pro Gly Thr Pro Thr Val Leu Arg Trp			
1845	1850	1855	
Ala Arg Ser Thr Ser Thr Ser Ser Pro Val Arg Pro Ala Ala Thr Phe			
1860	1865	1870	
Pro Pro Ala Thr His Cys Pro Leu Gly Gly Thr Leu Glu Gly Val Tyr			
1875	1880	1885	
Pro Thr Leu Met Glu Pro Val Leu Leu Pro Lys Glu Thr Ser Arg Val			
1890	1895	1900	
Ala Arg Pro Glu Arg Ala Arg Val Asp Ala Gly His Ala Phe Leu Thr			
1905	1910	1915	1920
Lys Pro Pro Gly Arg Pro Ala Ser Ser Pro Ser Lys Ser Ser Glu			
1925	1930	1935	
Pro Arg Ser Leu Ala Pro Pro Ser Ser His Thr Ala Ile Ala Arg			
1940	1945	1950	
Thr Pro Ala Lys Asn Leu Ala Pro His His Ala Ser Pro Asp Pro Pro			
1955	1960	1965	
Ala Pro Thr Ser Ala Ser Asp Leu His Arg Glu Lys Thr Gln Ser Lys			
1970	1975	1980	
Pro Phe Ser Ile Gln Glu Leu Glu Leu Arg Ser Leu Gly Tyr His Ser			
1985	1990	1995	2000
Gly Ala Gly Tyr Ser Pro Asp Gly Val Glu Pro Ile Ser Pro Val Ser			
2005	2010	2015	
Ser Pro Ser Leu Thr His Asp Lys Gly Leu Ser Lys Pro Leu Glu Glu			
2020	2025	2030	
Leu Glu Lys Ser His Leu Glu Gly Glu Leu Arg His Lys Gln Pro Gly			
2035	2040	2045	
Pro Met Lys Leu Ser Ala Glu Ala Ala His Leu Pro His Leu Arg Pro			
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Leu Pro Glu Ser Gln Pro Ser Ser Ser Pro Leu Leu Gln Thr Ala Pro			
2065	2070	2075	2080
Gly Ile Lys Gly His Gln Arg Val Val Thr Leu Ala Gln His Ile Ser			
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Glu Val Ile Thr Gln Asp Tyr Thr Arg His His Pro Gln Gln Leu Ser			
2100	2105	2110	
Gly Pro Leu Pro Ala Pro Leu Tyr Ser Phe Pro Gly Ala Ser Cys Pro			
2115	2120	2125	
Val Leu Asp Leu Arg Arg Pro Pro Ser Asp Leu Tyr Leu Pro Pro Pro			
2130	2135	2140	
Asp His Gly Thr Pro Ala Arg Gly Ser Pro His Ser Glu Gly Gly Lys			
2145	2150	2155	2160
Arg Ser Pro Glu Pro Ser Lys Thr Ser Val Leu Gly Ser Ser Glu Asp			
2165	2170	2175	
Ala Ile Glu Pro Val Ser Pro Pro Glu Gly Met Thr Glu Pro Gly His			
2180	2185	2190	
Ala Arg Ser Thr Ala Tyr Pro Leu Leu Tyr Arg Asp Gly Glu Gln Gly			
2195	2200	2205	
Glu Pro Arg Met Gly Leu Glu Ser Pro Gly Asn Thr Ser Gln Pro Pro			
2210	2215	2220	
Thr Phe Ser Lys Leu Thr Glu Ser Asn Ser Ala Met Val Lys Ser			

2225	2230	2235	2240
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Pro Glu Tyr Asn Ile Gly Gln Pro Gly Thr Glu Ile Phe Asn Met Pro			
2260	2265	2270	
Ala Ile Thr Gly Ala Gly Leu Met Thr Cys Arg Ser Gln Ala Val Gln			
2275	2280	2285	
Glu His Ala Ser Thr Asn Met Gly Leu Glu Ala Ile Ile Arg Lys Ala			
2290	2295	2300	
Leu Met Gly Lys Tyr Asp Gln Trp Glu Glu Pro Pro Pro Leu Gly Ala			
2305	2310	2315	2320
Asn Ala Phe Asn Pro Leu Asn Ala Ser Ala Ser Leu Pro Ala Ala Ala			
2325	2330	2335	
Met Pro Ile Thr Thr Ala Asp Gly Arg Ser Asp His Ala Leu Thr Ser			
2340	2345	2350	
Pro Gly Gly Gly Lys Ala Lys Val Ser Gly Arg Pro Ser Ser Arg			
2355	2360	2365	
Lys Ala Lys Ser Pro Ala Pro Gly Leu Ala Ser Gly Asp Arg Pro Pro			
2370	2375	2380	
Ser Val Ser Ser Val His Ser Glu Gly Asp Cys Asn Arg Arg Thr Pro			
2385	2390	2395	2400
Leu Thr Asn Arg Val Trp Glu Asp Arg Pro Ser Ser Ala Gly Ser Thr			
2405	2410	2415	
Pro Phe Pro Tyr Asn Pro Leu Ile Met Arg Leu Gln Ala Gly Val Met			
2420	2425	2430	
Ala Ser Pro Pro Pro Pro Gly Leu Ala Ala Gly Ser Gly Pro Leu Ala			
2435	2440	2445	
Gly Pro His His Ala Trp Asp Glu Glu Pro Lys Pro Leu Leu Cys Ser			
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Gln Tyr Glu Thr Leu Ser Asp Ser Glu			
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ccttagtcct aggtgtggtc aagagtgtct tgggcctccaa agcctacctg gaccctacca 360  
cc atg tca gga tcc aca cag cct gtg gca cag aca tgg cgg gct gct 407  
Met Ser Gly Ser Thr Gln Pro Val Ala Gln Thr Trp Arg Ala Ala  
1 5 10 15

gag ccc cgc tac cca ccc cat ggc atc tcc tac ccg gtg cag ata gcc 455  
Glu Pro Arg Tyr Pro Pro His Gly Ile Ser Tyr Pro Val Gln Ile Ala  
20 25 30

cg <del>g</del> tcc cac ac <del>g</del> cct ct <del>g</del> tac aac cag cc <del>g</del> tct gac aca cgc cag tac		503	
Arg Ser His Thr Pro Leu Tyr Asn Gln Pro Ser Asp Thr Arg Gln Tyr			
35	40	45	
cat gaa aac atc aaa ata aac cag gc <del>g</del> at <del>g</del> cg <del>g</del> aag aag ct <del>g</del> atc tt <del>g</del>		551	
His Glu Asn Ile Lys Ile Asn Gln Ala Met Arg Lys Lys Leu Ile Leu			
50	55	60	
ta <del>c</del> ttt aag cg <del>g</del> agg aac cac gc <del>g</del> cgc aag cag t <del>g</del> gaa cag cgc tt <del>c</del>		599	
Tyr Phe Lys Arg Arg Asn His Ala Arg Lys Gln Trp Glu Gln Arg Phe			
65	70	75	
tg <del>c</del> cag cgc tat gac cag ctc at <del>g</del> gag gc <del>g</del> t <del>g</del> gag aag aag gta gag		647	
Cys Gln Arg Tyr Asp Gln Leu Met Glu Ala Trp Glu Lys Lys Val Glu			
80	85	90	95
cg <del>c</del> ata gag aac aat cc <del>g</del> cga agg agg gc <del>c</del> aag gag agc aag gt <del>g</del> agg		695	
Arg Ile Glu Asn Asn Pro Arg Arg Ala Lys Glu Ser Lys Val Arg			
100	105	110	
ga <del>g</del> tac tac gag aaa cag tt <del>c</del> cc <del>g</del> gag atc cg <del>c</del> aag cag cg <del>g</del> gag ct <del>g</del>		743	
Glu Tyr Tyr Glu Lys Gln Phe Pro Glu Ile Arg Lys Gln Arg Glu Leu			
115	120	125	
ca <del>g</del> gag cgc at <del>g</del> cag agc agg gt <del>g</del> ggc cag cgt ggc agt ggg ct <del>c</del> t <del>c</del>		791	
Gln Glu Arg Met Gln Ser Arg Val Gly Gln Arg Gly Ser Gly Leu Ser			
130	135	140	
at <del>g</del> tc <del>g</del> gct gc <del>c</del> cgc agt gag cat gag gtt t <del>c</del> t <del>g</del> atc att gat ggc		839	
Met Ser Ala Ala Arg Ser Glu His Glu Val Ser Glu Ile Ile Asp Gly			
145	150	155	
tt <del>g</del> t <del>c</del> t <del>t</del> gag cag gag aac ct <del>g</del> gag aag cag at <del>g</del> cgc cag ct <del>g</del> gc <del>c</del> gt <del>g</del>		887	
Leu Ser Glu Gln Glu Asn Leu Glu Lys Gln Met Arg Gln Leu Ala Val			
160	165	170	175
atc cc <del>g</del> ccc at <del>g</del> tt <del>g</del> tac gac gc <del>g</del> gac cag cag agg atc aag tt <del>c</del> atc		935	
Ile Pro Pro Met Leu Tyr Asp Ala Asp Gln Gln Arg Ile Lys Phe Ile			
180	185	190	
aa <del>c</del> at <del>g</del> aat gga ctc at <del>g</del> gat gac ccc at <del>g</del> aag gtc tac aag gac cgt		983	
Asn Met Asn Gly Leu Met Asp Asp Pro Met Lys Val Tyr Lys Asp Arg			
195	200	205	
ca <del>g</del> gtt acc aac at <del>g</del> t <del>g</del> agc gag cag gag agg gac acc tt <del>c</del> cgt gag		1031	
Gln Val Thr Asn Met Trp Ser Glu Gln Glu Arg Asp Thr Phe Arg Glu			
210	215	220	
aa <del>g</del> ttt at <del>g</del> cag cac cct aag aac tt <del>c</del> ggc ct <del>g</del> att gc <del>c</del> t <del>c</del> tt <del>c</del> ct <del>g</del>		1079	
Lys Phe Met Gln His Pro Lys Asn Phe Gly Leu Ile Ala Ser Phe Leu			
225	230	235	
ga <del>g</del> aga aag ac <del>g</del> gtc gct gag t <del>g</del> t <del>g</del> t <del>c</del> ct <del>g</del> tat tac tac ct <del>g</del> acc aag		1127	
Glu Arg Lys Thr Val Ala Glu Cys Val Leu Tyr Tyr Tyr Leu Thr Lys			
240	245	250	255
aa <del>g</del> aat gaa aat tac aag agc tt <del>g</del> gt <del>g</del> agg cg <del>g</del> agc tat cg <del>g</del> cgc cgt		1175	
Lys Asn Glu Asn Tyr Lys Ser Leu Val Arg Arg Ser Tyr Arg Arg Arg			
260	265	270	

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Gly Lys Ser Gln		
275 280 285		
cag atg gca cgg agc agc cag gag gag aag gag gag aag gag aag gag		1271
Gln Met Ala Arg Ser Ser Gln Glu Glu Lys Glu Glu Lys Glu Lys Glu		
290 295 300		
aag gag gcc gac aag gag gaa gag aag cag gat gcg gag aac gag aag		1319
Lys Glu Ala Asp Lys Glu Glu Lys Gln Asp Ala Glu Asn Glu Lys		
305 310 315		
gaa gaa ctc agc aag gag aag aca gac gac act tct ggc gag gac aac		1367
Glu Glu Leu Ser Lys Glu Lys Thr Asp Asp Thr Ser Gly Glu Asp Asn		
320 325 330 335		
gat gag aaa gag gcc gtg gcc tcc aaa ggc cgc aaa act gcc aac agc		1415
Asp Glu Lys Glu Ala Val Ala Ser Lys Gly Arg Lys Thr Ala Asn Ser		
340 345 350		
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Gln Gly Arg Arg Lys Gly Arg Ile Thr Arg Ser Met Ala Asn Glu Ala		
355 360 365		
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Asn His Glu Glu Thr Ala Thr Pro Gln Gln Ser Ser Glu Leu Ala Ser		
370 375 380		
atg gag atg aac gag agt tct cgc tgg act gag gaa gag atg gag aca		1559
Met Glu Met Asn Glu Ser Ser Arg Trp Thr Glu Glu Met Glu Thr		
385 390 395		
gca aag aaa ggc ctc ctg gaa cat ggg agg aac tgg tca gcc att gcc		1607
Ala Lys Lys Gly Leu Leu Glu His Gly Arg Asn Trp Ser Ala Ile Ala		
400 405 410 415		
cgc atg gtg ggc tcc aag acc gtg tcc cag tgt aag aac ttc tac ttc		1655
Arg Met Val Gly Ser Lys Thr Val Ser Gln Cys Lys Asn Phe Tyr Phe		
420 425 430		
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Asn Tyr Lys Lys Arg Gln Asn Leu Asp Glu Ile Leu Gln Gln His Lys		
435 440 445		
cta aag atg gag aag gag agg aac gct cgg agg aag aag aag acc		1751
Leu Lys Met Glu Lys Glu Arg Asn Ala Arg Arg Lys Lys Lys Lys Thr		
450 455 460		
cca gct gcg gcg agc gag aca gcc ttc cca cct gcc gct gag gac		1799
Pro Ala Ala Ala Ser Glu Glu Thr Ala Phe Pro Pro Ala Ala Glu Asp		
465 470 475		
gaa gag atg gaa gca tca ggc gca agt gcc aat gag gaa gag ctg gcg		1847
Glu Glu Met Glu Ala Ser Gly Ala Ser Ala Asn Glu Glu Glu Leu Ala		
480 485 490 495		
gag gag gca gaa gcc tca cag gcc tct ggg aat gag gtt ccc aga gtt		1895
Glu Glu Ala Glu Ala Ser Gln Ala Ser Gly Asn Glu Val Pro Arg Val		
500 505 510		

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agt gtc cca tcc ccg cgt tca gaa gcc acg aag gac act ggg cct aaa Ser Val Pro Ser Pro Arg Ser Glu Ala Thr Lys Asp Thr Gly Pro Lys 530 535 540	1991
ccc act ggc act gaa gca ttg ccc gct gcc acc cag cca cct gtt cct Pro Thr Gly Thr Glu Ala Leu Pro Ala Ala Thr Gln Pro Pro Val Pro 545 550 555	2039
cct cca gaa gaa ccg gca gta gcc cct gct gag ccc tcc cca gtc cct Pro Pro Glu Glu Pro Ala Val Ala Pro Ala Glu Pro Ser Pro Val Pro 560 565 570 575	2087
gat gcc agt ggc cca cca tcc cca gag cct tcc cat cac ctg ccg cac Asp Ala Ser Gly Pro Pro Ser Pro Glu Pro Ser His His Leu Pro His 580 585 590	2135
ccc cgg cta ctg tgg aca agg atg aac aag aag ccc cgg ctg ctc cag Pro Arg Leu Leu Trp Thr Arg Met Asn Lys Lys Pro Arg Leu Leu Gln 595 600 605	2183
ctc ccc aga cag agg atg cca agg agc aga agt ctg agg ccg agg aga Leu Pro Arg Gln Arg Met Pro Arg Ser Arg Ser Leu Arg Pro Arg Arg 610 615 620	2231
tcg atg tgg gaa aag cca gag gag ccc gag gct tct gag aag ccc cgg Ser Met Trp Glu Lys Pro Glu Glu Pro Glu Ala Ser Glu Lys Pro Pro 625 630 635	2279
aag agt gta aag agt gac cac aag aag gag acc gag gaa gag cct gaa Lys Ser Val Lys Ser Asp His Lys Lys Glu Thr Glu Glu Glu Pro Glu 640 645 650 655	2327
gac aaa gcc aag ggc aca gag gcc att gaa act gtg tct gag gca cca Asp Lys Ala Lys Gly Thr Glu Ala Ile Glu Thr Val Ser Glu Ala Pro 660 665 670	2375
ctt aag gtg gag aag gct ggt agc aag gca gct gtg acc aag ggt tcc Leu Lys Val Glu Lys Ala Gly Ser Lys Ala Ala Val Thr Lys Gly Ser 675 680 685	2423
agc tca ggt gcc acc cag gac agt gac tcc agt gcc acc tgc agt gcc Ser Ser Gly Ala Thr Gln Asp Ser Asp Ser Ala Thr Cys Ser Ala 690 695 700	2471
gat gag gtg gac gaa ccc gaa gga ggt gac aag ggc agg ctg ctg tca Asp Glu Val Asp Glu Pro Glu Gly Gly Asp Lys Gly Arg Leu Leu Ser 705 710 715	2519
cca agg ccc agc ctc ctc acc ccg gct gga gat ccc cgg gcc agt acc Pro Arg Pro Ser Leu Leu Thr Pro Ala Gly Asp Pro Arg Ala Ser Thr 720 725 730 735	2567
tcg ccc cag aag ccg ctg gac ctg aag cag ctg aag cag cga gca gcc Ser Pro Gln Lys Pro Leu Asp Leu Lys Gln Leu Lys Gln Arg Ala Ala 740 745 750	2615

gcc atc ccc cct atc gtc acc aag gtc cat gag ccc ccc cg <sup>g</sup> gag gac Ala Ile Pro Pro Ile Val Thr Lys Val His Glu Pro Pro Arg Glu Asp 755 760 765	2663
aca gta ccc cca aag cca gtt ccc cct gtg cct cca ccc acg cag cac Thr Val Pro Pro Lys Pro Val Pro Pro Val Pro Pro Thr Gln His 770 775 780	2711
cta cag cca gag ggt gac gtg tct cag cag tcg gga gga agt cca cgt Leu Gln Pro Glu Gly Asp Val Ser Gln Ser Gly Gly Ser Pro Arg 785 790 795	2759
ggc aag tcc cgc agc cca gtg cct cct gcc gag aaa gag gca gag aaa Gly Lys Ser Arg Ser Pro Val Pro Ala Glu Lys Glu Ala Glu Lys 800 805 810 815	2807
ccc gca ttc ttt ccg gct ttc cca act gag ggc cca aag cta ccg act Pro Ala Phe Pro Ala Phe Pro Thr Glu Gly Pro Lys Leu Pro Thr 820 825 830	2855
gag ccc cca cgc tgg tca tcg ggc ctg ccc ttc ccc atc cct cca cg <sup>g</sup> Glu Pro Pro Arg Trp Ser Ser Gly Leu Pro Phe Pro Ile Pro Pro Arg 835 840 845	2903
gag gtg atc aag act tcc cca cac gcc gct gac ccc tct gcc ttc tcc Glu Val Ile Lys Thr Ser Pro His Ala Ala Asp Pro Ser Ala Phe Ser 850 855 860	2951
tac aca ccc ccc ggt cac ccg ctg cct ctg ggc ctc cac gat agt gcc Tyr Thr Pro Pro Gly His Pro Leu Pro Leu Gly Leu His Asp Ser Ala 865 870 875	2999
cg <sup>g</sup> ccc gtc ctg cca cgt ccc ccc atc tct aac ccc cca ccc ctc atc Arg Pro Val Leu Pro Arg Pro Pro Ile Ser Asn Pro Pro Pro Leu Ile 880 885 890 895	3047
tcc tct gcc aag cat ccc ggc gta ctt gag agg cag ctg ggt gcc atc Ser Ser Ala Lys His Pro Gly Val Leu Glu Arg Gln Leu Gly Ala Ile 900 905 910	3095
tcc cag cag ggg atg tca gtc cag ctt cgt gtg cct cac tca gag cat Ser Gln Gln Gly Met Ser Val Gln Leu Arg Val Pro His Ser Glu His 915 920 925	3143
gcc aag gcc ccc atg ggc cct ctc acc atg ggg ctg ccc ctt gcc gtg Ala Lys Ala Pro Met Gly Pro Leu Thr Met Gly Leu Pro Leu Ala Val 930 935 940	3191
gac cct aag aag ctg ggg aca gca ctg ggc tcc gcc acc agt gga agc Asp Pro Lys Lys Leu Gly Thr Ala Leu Gly Ser Ala Thr Ser Gly Ser 945 950 955	3239
atc acc aag ggc ctc ccc agt acc cgg gct gca gac ggc ccc agc tac Ile Thr Lys Gly Leu Pro Ser Thr Arg Ala Ala Asp Gly Pro Ser Tyr 960 965 970 975	3287
aga ggc tct atc acc cac ggc acg ccc gca gac gtc ctc tac aag ggt Arg Gly Ser Ile Thr His Gly Thr Pro Ala Asp Val Leu Tyr Lys Gly 980 985 990	3335

acc atc agc agg atc gtc ggt gag gac agc cca agt cgc ctt gac cgg Thr Ile Ser Arg Ile Val Gly Glu Asp Ser Pro Ser Arg Leu Asp Arg 995 1000 1005	3383
gca cga gag gac acc ctg ccc aag ggc cat gtc atc tat gag ggc aag Ala Arg Glu Asp Thr Leu Pro Lys Gly His Val Ile Tyr Glu Gly Lys 1010 1015 1020	3431
aaa ggc cac gtc cta tcc tat gaa ggt ggt atg tcc gtg tca cag tgc Lys Gly His Val Leu Ser Tyr Glu Gly Met Ser Val Ser Gln Cys 1025 1030 1035	3479
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act gtg aag gag ggc cgc tct atc cat gag atc ccg aga gag gag Thr Val Lys Glu Ala Gly Arg Ser Ile His Glu Ile Pro Arg Glu Glu 1170 1175 1180	3911
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ggt tcc atc acc cag ggc acc cca ctc aag tac gac tct ggg gca ccc Gly Ser Ile Thr Gln Gly Thr Pro Leu Lys Tyr Asp Ser Gly Ala Pro 1200 1205 1210 1215	4007
tcc act ggc acc aag aaa cac gac gtg cgc tcc atc atc ggc agc ccc Ser Thr Gly Thr Lys Lys His Asp Val Arg Ser Ile Ile Gly Ser Pro 1220 1225 1230	4055

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Gly	Arg	Pro	Phe	Pro	Ala	Leu	His	Pro	Leu	Asp	Ile	Met	Ala	Asp	Ala								
1235								1240								1245							
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Arg	Ala	Leu	Glu	Arg	Ala	Cys	Tyr	Glu	Glu	Ser	Leu	Lys	Ser	Arg	Ser								
1250								1255								1260							
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Gly	Thr	Ser	Ser	Gly	Ala	Gly	Gly	Ser	Ile	Thr	Arg	Gly	Ala	Pro	Val								
1265								1270								1275							
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Val	Val	Pro	Glu	Leu	Gly	Lys	Pro	Arg	Gln	Ser	Pro	Leu	Thr	Tyr	Glu								
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Asp	His	Gly	Ala	Pro	Phe	Thr	Ser	His	Leu	Pro	Arg	Gly	Ser	Pro	Val								
1300																1305							
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1315																1320							
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Ser	Lys	Ala	Ser	Gln	Asp	Arg	Lys	Leu	Thr	Ser	Thr	Pro	Arg	Glu	Ile								
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Ala	Lys	Ser	Pro	His	Ser	Thr	Val	Pro	Glu	His	His	Pro	His	Pro	Ile								
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Ser	Pro	Tyr	Glu	His	Leu	Leu	Arg	Gly	Val	Thr	Gly	Val	Asp	Leu	Tyr								
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Arg	Gly	His	Ile	Pro	Leu	Ala	Phe	Asp	Pro	Thr	Ser	Ile	Pro	Arg	Gly								
1380																1385							
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Ile	Pro	Leu	Glu	Ala	Ala	Ala	Ala	Ala	Tyr	Tyr	Tyr	Leu	Pro	Arg	His	Leu							
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1410																1415							
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Gly	Tyr	Pro	Asp	Thr	Ala	Ala	Leu	Glu	Asn	Arg	Gln	Thr	Ile	Ile	Asn								
1425																1430							
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Asp	Tyr	Ile	Thr	Ser	Gln	Gln	Met	His	His	Asn	Ala	Ala	Ser	Ala	Met								
1440																1445							
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Ala	Gln	Arg	Ala	Asp	Met	Leu	Arg	Gly	Leu	Ser	Pro	Arg	Glu	Ser	Ser								
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gcc acc gcc atc gac cgc ctt gcc tac ctc ccc act gcg ccc cca ccc Ala Thr Ala Ile Asp Arg Leu Ala Tyr Leu Pro Thr Ala Pro Pro Pro 1505 1510 1515	4919
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aac acg agc atg aag ggc gtc acc tcc gtg gaa ccc ggc acg ccc Asn Thr Ser Met Lys Gly Val Val Thr Ser Val Glu Pro Gly Thr Pro 1620 1625 1630	5255
acg gtc ctg agg tgg gcc agg tcc acc tcc acc tct tcg cct gtc cgc Thr Val Leu Arg Trp Ala Arg Ser Thr Ser Thr Ser Pro Val Arg 1635 1640 1645	5303
cca gct gcc aca ttc cca cct gcc acc cac tgc cca ctt ggt ggc acc Pro Ala Ala Thr Phe Pro Ala Thr His Cys Pro Leu Gly Gly Thr 1650 1655 1660	5351
ctt gaa ggg gtc tac cct acc ctc atg gag ccc gtc ctg tta ccc aag Leu Glu Gly Val Tyr Pro Thr Leu Met Glu Pro Val Leu Leu Pro Lys 1665 1670 1675	5399
gag acc tct cgg gtc gcc cgg ccc gag cgg gcc cgg gtc gac gct ggc Glu Thr Ser Arg Val Ala Arg Pro Glu Arg Ala Arg Val Asp Ala Gly 1680 1685 1690 1695	5447
cat gcc ttt ctt acc aaa ccc ccg ggc cgg gag ccc gcc tcc tca ccc His Ala Phe Leu Thr Lys Pro Pro Gly Arg Glu Pro Ala Ser Ser Pro 1700 1705 1710	5495

agc aag agc tcc gag ccc cga tcc cta gca ccc ccc agc tcc agc cac Ser Lys Ser Ser Glu Pro Arg Ser Leu Ala Pro Pro Ser Ser Ser His 1715 1720 1725	5543
aca gcc atc gcc cgc acc cca gca aag aac ctt gca ccc cac cat gcc Thr Ala Ile Ala Arg Thr Pro Ala Lys Asn Leu Ala Pro His His Ala 1730 1735 1740	5591
agt ccg gac ccg ccg gcg ccc acc tcg gcc tca gat ctg cac cga gaa Ser Pro Asp Pro Pro Ala Pro Thr Ser Ala Ser Asp Leu His Arg Glu 1745 1750 1755	5639
aag actcaa agt aaa ccc ttt tcc atc cag gaa ttg gaa ctc cgt tct Lys Thr Gln Ser Lys Pro Phe Ser Ile Gln Glu Leu Glu Leu Arg Ser 1760 1765 1770 1775	5687
ctg ggt tac cac agt gga gct ggc tac agc ccc gat ggg gtg gag ccc Leu Gly Tyr His Ser Gly Ala Gly Tyr Ser Pro Asp Gly Val Glu Pro 1780 1785 1790	5735
atc agc ccg gtg agc tcc ccc agc ctg acc cac gac aag ggg ctc tcc Ile Ser Pro Val Ser Ser Pro Ser Leu Thr His Asp Lys Gly Leu Ser 1795 1800 1805	5783
aaa cct ctg gaa gag cta gag aag agc cac ttg gaa ggg gag ctg cgg Lys Pro Leu Glu Leu Glu Lys Ser His Leu Glu Gly Glu Leu Arg 1810 1815 1820	5831
cac aag cag cca ggc ccc atg aag ctc agc gcg gag gct gcc cat ctc His Lys Gln Pro Gly Pro Met Lys Leu Ser Ala Glu Ala Ala His Leu 1825 1830 1835	5879
cca cat ctg cgg cca ctg ccc gag agc cag ccc tca tcc agc cca ctc Pro His Leu Arg Pro Leu Pro Glu Ser Gln Pro Ser Ser Ser Pro Leu 1840 1845 1850 1855	5927
ctc cag act gcc cca ggc atc aaa ggt cac cag agg gtg gtc acc ctg Leu Gln Thr Ala Pro Gly Ile Lys Gly His Gln Arg Val Val Thr Leu 1860 1865 1870	5975
gct cag cac atc agc gag gtc att acg cag gac tac acg cgc cac cac Ala Gln His Ile Ser Glu Val Ile Thr Gln Asp Tyr Thr Arg His His 1875 1880 1885	6023
ccg cag cag ctc agt ggc ccc ctt ccc gcc cct ctc tac tcc ttt ccc Pro Gln Gln Leu Ser Gly Pro Leu Pro Ala Pro Leu Tyr Ser Phe Pro 1890 1895 1900	6071
gga gcc agc tgc cct gtc ctg gat ctt cgc cgc cca ccc agt gac ctc Gly Ala Ser Cys Pro Val Leu Asp Leu Arg Arg Pro Pro Ser Asp Leu 1905 1910 1915	6119
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agt gaa ggg ggc aaa agg tcc cca gaa ccc agc aaa aca tcg gtc ctg Ser Glu Gly Gly Lys Arg Ser Pro Glu Pro Ser Lys Thr Ser Val Leu 1940 1945 1950	6215

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act gag cca gga cat gct cgg agc act gcg tac cca ctg ctg tat cga Thr Glu Pro Gly His Ala Arg Ser Thr Ala Tyr Pro Leu Leu Tyr Arg 1970 1975 1980	6311
gac ggg gaa cag ggc gag ccc agg atg ggt cta gag tct cca ggc aac Asp Gly Glu Gln Gly Glu Pro Arg Met Gly Leu Glu Ser Pro Gly Asn 1985 1990 1995	6359
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cac aac cgg aac gag cca gaa tac aat att ggc cag cct ggg acg gaa His Asn Arg Asn Glu Pro Glu Tyr Asn Ile Gly Gln Pro Gly Thr Glu 2035 2040 2045	6503
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ctg ccc gct gct atg ccc ata acc act gct gac gga cgg agt gac Leu Pro Ala Ala Ala Met Pro Ile Thr Thr Ala Asp Gly Arg Ser Asp 2115 2120 2125	6743
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Ser Gly Pro Leu Ala Gly Pro His His Ala Trp Asp Glu Glu Pro Lys	
2225 2230 2235	
cca ctg ctg tgt tca cag tat gag aca ctc tcg gac agc gag tga	7124
Pro Leu Leu Cys Ser Gln Tyr Glu Thr Leu Ser Asp Ser Glu *	
2240 2245 2250	
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35 40 45  
Glu Asn Ile Lys Ile Asn Gln Ala Met Arg Lys Lys Leu Ile Leu Tyr  
50 55 60  
Phe Lys Arg Arg Asn His Ala Arg Lys Gln Trp Glu Gln Arg Phe Cys  
65 70 75 80  
Gln Arg Tyr Asp Gln Leu Met Glu Ala Trp Glu Lys Lys Val Glu Arg  
85 90 95  
Ile Glu Asn Asn Pro Arg Arg Arg Ala Lys Glu Ser Lys Val Arg Glu  
100 105 110  
Tyr Tyr Glu Lys Gln Phe Pro Glu Ile Arg Lys Gln Arg Glu Leu Gln  
115 120 125  
Glu Arg Met Gln Ser Arg Val Gly Gln Arg Gly Ser Gly Leu Ser Met  
130 135 140  
Ser Ala Ala Arg Ser Glu His Glu Val Ser Glu Ile Ile Asp Gly Leu  
145 150 155 160  
Ser Glu Gln Glu Asn Leu Glu Lys Gln Met Arg Gln Leu Ala Val Ile  
165 170 175  
Pro Pro Met Leu Tyr Asp Ala Asp Gln Gln Arg Ile Lys Phe Ile Asn  
180 185 190  
Met Asn Gly Leu Met Asp Asp Pro Met Lys Val Tyr Lys Asp Arg Gln  
195 200 205  
Val Thr Asn Met Trp Ser Glu Gln Glu Arg Asp Thr Phe Arg Glu Lys  
210 215 220  
Phe Met Gln His Pro Lys Asn Phe Gly Leu Ile Ala Ser Phe Leu Glu  
225 230 235 240  
Arg Lys Thr Val Ala Glu Cys Val Leu Tyr Tyr Tyr Leu Thr Lys Lys

245	250	255	
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Lys Ser Gln			
275	280	285	
Met Ala Arg Ser Ser Gln Glu Glu Lys Glu Glu Lys Glu Lys Glu Lys			
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Glu Ala Asp Lys Glu Glu Lys Gln Asp Ala Glu Asn Glu Lys Glu			
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Glu Leu Ser Lys Glu Lys Thr Asp Asp Thr Ser Gly Glu Asp Asn Asp			
325	330	335	
Glu Lys Glu Ala Val Ala Ser Lys Gly Arg Lys Thr Ala Asn Ser Gln			
340	345	350	
Gly Arg Arg Lys Gly Arg Ile Thr Arg Ser Met Ala Asn Glu Ala Asn			
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His Glu Glu Thr Ala Thr Pro Gln Gln Ser Ser Glu Leu Ala Ser Met			
370	375	380	
Glu Met Asn Glu Ser Ser Arg Trp Thr Glu Glu Met Glu Thr Ala			
385	390	395	400
Lys Lys Gly Leu Leu Glu His Gly Arg Asn Trp Ser Ala Ile Ala Arg			
405	410	415	
Met Val Gly Ser Lys Thr Val Ser Gln Cys Lys Asn Phe Tyr Phe Asn			
420	425	430	
Tyr Lys Lys Arg Gln Asn Leu Asp Glu Ile Leu Gln Gln His Lys Leu			
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Lys Met Glu Lys Glu Arg Asn Ala Arg Arg Lys Lys Lys Lys Thr Pro			
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Val Pro Ser Pro Arg Ser Glu Ala Thr Lys Asp Thr Gly Pro Lys Pro			
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Thr Gly Thr Glu Ala Leu Pro Ala Ala Thr Gln Pro Pro Val Pro Pro			
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Pro Glu Glu Pro Ala Val Ala Pro Ala Glu Pro Ser Pro Val Pro Asp			
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Ala Ser Gly Pro Pro Ser Pro Glu Pro Ser His His Leu Pro His Pro			
580	585	590	
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595	600	605	
Pro Arg Gln Arg Met Pro Arg Ser Arg Ser Leu Arg Pro Arg Arg Ser			
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Met Trp Glu Lys Pro Glu Glu Pro Glu Ala Ser Glu Lys Pro Pro Lys			
625	630	635	640
Ser Val Lys Ser Asp His Lys Lys Glu Thr Glu Glu Pro Glu Asp			
645	650	655	
Lys Ala Lys Gly Thr Glu Ala Ile Glu Thr Val Ser Glu Ala Pro Leu			
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Lys Val Glu Lys Ala Gly Ser Lys Ala Ala Val Thr Lys Gly Ser Ser			
675	680	685	
Ser Gly Ala Thr Gln Asp Ser Asp Ser Ser Ala Thr Cys Ser Ala Asp			
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Glu Val Asp Glu Pro Glu Gly Gly Asp Lys Gly Arg Leu Leu Ser Pro			
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Arg Pro Ser Leu Leu Thr Pro Ala Gly Asp Pro Arg Ala Ser Thr Ser			

725	730	735	
Pro Gln Lys Pro Leu Asp Leu Lys Gln Leu Lys Gln Arg Ala Ala Ala			
740	745	750	
Ile Pro Pro Ile Val Thr Lys Val His Glu Pro Pro Arg Glu Asp Thr			
755	760	765	
Val Pro Pro Lys Pro Val Pro Pro Val Pro Pro Pro Thr Gln His Leu			
770	775	780	
Gln Pro Glu Gly Asp Val Ser Gln Gln Ser Gly Gly Ser Pro Arg Gly			
785	790	795	800
Lys Ser Arg Ser Pro Val Pro Pro Ala Glu Lys Glu Ala Glu Lys Pro			
805	810	815	
Ala Phe Phe Pro Ala Phe Pro Thr Glu Gly Pro Lys Leu Pro Thr Glu			
820	825	830	
Pro Pro Arg Trp Ser Ser Gly Leu Pro Phe Pro Ile Pro Pro Arg Glu			
835	840	845	
Val Ile Lys Thr Ser Pro His Ala Ala Asp Pro Ser Ala Phe Ser Tyr			
850	855	860	
Thr Pro Pro Gly His Pro Leu Pro Leu Gly Leu His Asp Ser Ala Arg			
865	870	875	880
Pro Val Leu Pro Arg Pro Pro Ile Ser Asn Pro Pro Pro Leu Ile Ser			
885	890	895	
Ser Ala Lys His Pro Gly Val Leu Glu Arg Gln Leu Gly Ala Ile Ser			
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Gln Gln Gly Met Ser Val Gln Leu Arg Val Pro His Ser Glu His Ala			
915	920	925	
Lys Ala Pro Met Gly Pro Leu Thr Met Gly Leu Pro Leu Ala Val Asp			
930	935	940	
Pro Lys Lys Leu Gly Thr Ala Leu Gly Ser Ala Thr Ser Gly Ser Ile			
945	950	955	960
Thr Lys Gly Leu Pro Ser Thr Arg Ala Ala Asp Gly Pro Ser Tyr Arg			
965	970	975	
Gly Ser Ile Thr His Gly Thr Pro Ala Asp Val Leu Tyr Lys Gly Thr			
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Ile Ser Arg Ile Val Gly Glu Asp Ser Pro Ser Arg Leu Asp Arg Ala			
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Arg Glu Asp Thr Leu Pro Lys Gly His Val Ile Tyr Glu Gly Lys Lys			
1010	1015	1020	
Gly His Val Leu Ser Tyr Glu Gly Gly Met Ser Val Ser Gln Cys Ser			
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Lys Glu Asp Gly Arg Ser Ser Ser Gly Pro Pro His Glu Thr Ala Ala			
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Pro Lys Arg Thr Tyr Asp Met Met Glu Gly Arg Val Gly Arg Thr Val			
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Thr Ser Ala Ser Ile Glu Gly Leu Met Gly Arg Ala Ile Pro Glu Gln			
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His Ser Pro His Leu Lys Glu Gln His His Ile Arg Gly Ser Ile Thr			
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Gln Gly Ile Pro Arg Ser Tyr Val Glu Ala Gln Glu Asp Tyr Leu Arg			
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Arg Glu Ala Lys Leu Leu Lys Arg Glu Gly Thr Pro Pro Pro Pro			
1125	1130	1135	
Pro Pro Arg Asp Leu Thr Glu Thr Tyr Lys Pro Arg Pro Leu Asp Pro			
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Leu Gly Pro Leu Lys Leu Lys Pro Thr His Glu Gly Val Val Ala Thr			
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Val Lys Glu Ala Gly Arg Ser Ile His Glu Ile Pro Arg Glu Glu Leu			
1170	1175	1180	
Arg Arg Thr Pro Glu Leu Pro Leu Ala Pro Arg Pro Leu Lys Glu Gly			
1185	1190	1195	1200
Ser Ile Thr Gln Gly Thr Pro Leu Lys Tyr Asp Ser Gly Ala Pro Ser			

1205	1210	1215	
Thr Gly Thr Lys Lys His Asp Val Arg Ser Ile Ile Gly Ser Pro Gly			
1220	1225	1230	
Arg Pro Phe Pro Ala Leu His Pro Leu Asp Ile Met Ala Asp Ala Arg			
1235	1240	1245	
Ala Leu Glu Arg Ala Cys Tyr Glu Glu Ser Leu Lys Ser Arg Ser Gly			
1250	1255	1260	
Thr Ser Ser Gly Ala Gly Gly Ser Ile Thr Arg Gly Ala Pro Val Val			
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Val Pro Glu Leu Gly Lys Pro Arg Gln Ser Pro Leu Thr Tyr Glu Asp			
1285	1290	1295	
His Gly Ala Pro Phe Thr Ser His Leu Pro Arg Gly Ser Pro Val Thr			
1300	1305	1310	
Thr Arg Glu Pro Thr Pro Arg Leu Gln Glu Gly Ser Leu Leu Ser Ser			
1315	1320	1325	
Lys Ala Ser Gln Asp Arg Lys Leu Thr Ser Thr Pro Arg Glu Ile Ala			
1330	1335	1340	
Lys Ser Pro His Ser Thr Val Pro Glu His His Pro His Pro Ile Ser			
1345	1350	1355	1360
Pro Tyr Glu His Leu Leu Arg Gly Val Thr Gly Val Asp Leu Tyr Arg			
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Gly His Ile Pro Leu Ala Phe Asp Pro Thr Ser Ile Pro Arg Gly Ile			
1380	1385	1390	
Pro Leu Glu Ala Ala Ala Ala Tyr Tyr Leu Pro Arg His Leu Ala			
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Pro Ser Pro Thr Tyr Pro His Leu Tyr Pro Pro Tyr Leu Ile Arg Gly			
1410	1415	1420	
Tyr Pro Asp Thr Ala Ala Leu Glu Asn Arg Gln Thr Ile Ile Asn Asp			
1425	1430	1435	1440
Tyr Ile Thr Ser Gln Gln Met His His Asn Ala Ala Ser Ala Met Ala			
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Gln Arg Ala Asp Met Leu Arg Gly Leu Ser Pro Arg Glu Ser Ser Leu			
1460	1465	1470	
Ala Leu Asn Tyr Ala Ala Gly Pro Arg Gly Ile Ile Asp Leu Ser Gln			
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Val Pro His Leu Pro Val Leu Val Pro Pro Thr Pro Gly Thr Pro Ala			
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Thr Ala Ile Asp Arg Leu Ala Tyr Leu Pro Thr Ala Pro Pro Pro Phe			
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Ser Ser Arg His Ser Ser Ser Pro Leu Ser Pro Gly Gly Pro Thr His			
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Leu Ala Lys Pro Thr Ala Thr Ser Ser Ser Glu Arg Glu Arg Glu Arg			
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Glu Arg Glu Arg Asp Lys Ser Ile Leu Thr Ser Thr Thr Thr Val Glu			
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His Ala Pro Ile Trp Arg Pro Gly Thr Glu Gln Ser Ser Gly Ala Gly			
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Gly Ser Ser Arg Pro Ala Ser His Thr His Gln His Ser Pro Ile Ser			
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Pro Arg Thr Gln Asp Ala Leu Gln Gln Arg Pro Ser Val Leu His Asn			
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Thr Ser Met Lys Gly Val Val Thr Ser Val Glu Pro Gly Thr Pro Thr			
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Val Leu Arg Trp Ala Arg Ser Thr Ser Thr Ser Ser Pro Val Arg Pro			
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Glu Gly Val Tyr Pro Thr Leu Met Glu Pro Val Leu Leu Pro Lys Glu			
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Pro Asp Pro Pro Ala Pro Thr Ser Ala Ser Asp Leu His Arg Glu Lys			
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Thr Gln Ser Lys Pro Phe Ser Ile Gln Glu Leu Glu Leu Arg Ser Leu			
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Gly Tyr His Ser Gly Ala Gly Tyr Ser Pro Asp Gly Val Glu Pro Ile			
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Ser Pro Val Ser Ser Pro Ser Leu Thr His Asp Lys Gly Leu Ser Lys			
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His Leu Arg Pro Leu Pro Glu Ser Gln Pro Ser Ser Ser Pro Leu Leu			
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Gln Thr Ala Pro Gly Ile Lys Gly His Gln Arg Val Val Thr Leu Ala			
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Gln His Ile Ser Glu Val Ile Thr Gln Asp Tyr Thr Arg His His Pro			
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Gln Gln Leu Ser Gly Pro Leu Pro Ala Pro Leu Tyr Ser Phe Pro Gly			
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Ala Ser Cys Pro Val Leu Asp Leu Arg Arg Pro Pro Ser Asp Leu Tyr			
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Leu Pro Pro Pro Asp His Gly Thr Pro Ala Arg Gly Ser Pro His Ser			
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Glu Gly Gly Lys Arg Ser Pro Glu Pro Ser Lys Thr Ser Val Leu Gly			
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Gly Glu Gln Gly Glu Pro Arg Met Gly Leu Glu Ser Pro Gly Asn Thr			
1985	1990	1995	2000
Ser Gln Pro Pro Thr Phe Phe Ser Lys Leu Thr Glu Ser Asn Ser Ala			
2005	2010	2015	
Met Val Lys Ser Lys Lys Gln Glu Ile Asn Lys Lys Leu Asn Thr His			
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Asn Arg Asn Glu Pro Glu Tyr Asn Ile Gly Gln Pro Gly Thr Glu Ile			
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Phe Asn Met Pro Ala Ile Thr Gly Ala Gly Leu Met Thr Cys Arg Ser			
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Gln Ala Val Gln Glu His Ala Ser Thr Asn Met Gly Leu Glu Ala Ile			
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Pro Ala Ala Ala Met Pro Ile Thr Thr Ala Asp Gly Arg Ser Asp His			
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Ala Leu Thr Ser Pro Gly Gly Gly Lys Ala Lys Val Ser Gly Arg			
2130	2135	2140	
Pro Ser Ser Arg Lys Ala Lys Ser Pro Ala Pro Gly Leu Ala Ser Gly			
2145	2150	2155	2160
Asp Arg Pro Pro Ser Val Ser Ser Val His Ser Glu Gly Asp Cys Asn			

2165	2170	2175
Arg Arg Thr Pro Leu Thr Asn Arg Val Trp Glu Asp Arg Pro Ser Ser		
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Ala Gly Val Met Ala Ser Pro Pro Pro Pro Gly Leu Ala Ala Gly Ser		
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Gln Ser Arg Tyr Pro Pro His Ser Val Gln Tyr Thr Phe Pro Asn Thr			
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Glu Val Ser Gln Ala Ser Gln Leu Leu Gln Gln Gln Gln Gln Gln Gln			
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Arg Pro Gln Glu Arg Arg Thr Ser Tyr Glu Pro Phe His Pro Gly Pro			
85	90	95	
tcc cca gtg gat cat gat tca ctg gaa tcg aag cga cca cgt ctg gaa			528
Ser Pro Val Asp His Asp Ser Leu Glu Ser Lys Arg Pro Arg Leu Glu			
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cag gtt tct gat tct cat ttt cag cgt gtc agt gct gcg gtt ttg cct			576
Gln Val Ser Asp Ser His Phe Gln Arg Val Ser Ala Ala Val Leu Pro			
115	120	125	
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Leu Val His Pro Leu Pro Glu Gly Leu Arg Ala Ser Ala Asp Ala Lys			
			672

130

135

140

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gca aaa gta gaa cag cag atc ctt aaa ctg aaa aag aaa caa caa cag Ala Lys Val Glu Gln Gln Ile Leu Lys Leu Lys Lys Lys Gln Gln Gln 195 200 205	864
ctt gaa gaa gag gca gct aaa cct cct gag cct gag aag ccc gtg tcc Leu Glu Glu Ala Ala Lys Pro Pro Glu Pro Glu Lys Pro Val Ser 210 215 220	912
cct cct cct gtg gag cag aaa cac cgc agt att gtc caa att att tat Pro Pro Pro Val Glu Gln Lys His Arg Ser Ile Val Gln Ile Ile Tyr 225 230 235 240	960
gat gag aat cgg aaa aaa gca gaa gaa gct cat aaa att ttt gaa ggt Asp Glu Asn Arg Lys Lys Ala Glu Glu Ala His Lys Ile Phe Glu Gly 245 250 255	1008
ctt ggc cca aaa gtt gaa ctg cca ctg tat aac cag cca tca gat acc Leu Gly Pro Lys Val Glu Leu Pro Leu Tyr Asn Gln Pro Ser Asp Thr 260 265 270	1056
aag gtg tac cat gag aac atc aag aca aac cag gtg atg agg aaa aaa Lys Val Tyr His Glu Asn Ile Lys Thr Asn Gln Val Met Arg Lys Lys 275 280 285	1104
ctc att tta ttt ttt aaa aga aga aat cat gca aga aaa caa agg gaa Leu Ile Leu Phe Phe Lys Arg Arg Asn His Ala Arg Lys Gln Arg Glu 290 295 300	1152
caa aaa atc tgc cag cgt tat gat cag ctc atg gag gca tgg gag aaa Gln Lys Ile Cys Gln Arg Tyr Asp Gln Leu Met Glu Ala Trp Glu Lys 305 310 315 320	1200
aaa gtg gac aga ata gaa aat aat cct cgg agg aaa gct aaa gaa agc Lys Val Asp Arg Ile Glu Asn Asn Pro Arg Arg Lys Ala Lys Glu Ser 325 330 335	1248
aaa aca agg gaa tac tat gaa aag cag ttt cca gaa att cga aaa caa Lys Thr Arg Glu Tyr Tyr Glu Lys Gln Phe Pro Glu Ile Arg Lys Gln 340 345 350	1296
aga gaa cag caa gaa aga ttt cag cga gtt ggg cag agg gga gct ggt Arg Glu Gln Gln Glu Arg Phe Gln Arg Val Gly Gln Arg Gly Ala Gly 355 360 365	1344
ctt tca gcc acc att gct agg agt gag cat gag att tct gaa att att Leu Ser Ala Thr Ile Ala Arg Ser Glu His Glu Ile Ser Glu Ile Ile	1392

370

375

380

gat ggg ctc tct gag cag gag aat aat gag aaa caa atg cgg cag ctc	385	390	395	400	1440
Asp Gly Leu Ser Glu Gln Glu Asn Asn Glu Lys Gln Met Arg Gln Leu					
tct gtg att cca cct atg atg ttt gat gca gaa caa aga cga gtc aag					1488
Ser Val Ile Pro Pro Met Met Phe Asp Ala Glu Gln Arg Arg Val Lys	405	410	415		
ttc att aac atg aat ggg ctt atg gag gac cct atg aaa gtg tat aaa					1536
Phe Ile Asn Met Asn Gly Leu Met Glu Asp Pro Met Lys Val Tyr Lys	420	425	430		
gat agg cag ttt atg aat gtt tgg act gac cat gaa aag gag atc ttt					1584
Asp Arg Gln Phe Met Asn Val Trp Thr Asp His Glu Lys Glu Ile Phe	435	440	445		
aag gac aag ttt atc cag cat cca aaa aac ttt gga cta att gca tca					1632
Lys Asp Lys Phe Ile Gln His Pro Lys Asn Phe Gly Leu Ile Ala Ser	450	455	460		
tac ttg gag agg aag agt gtt cct gat tgt gtt ttg tat tac tat tta					1680
Tyr Leu Glu Arg Lys Ser Val Pro Asp Cys Val Leu Tyr Tyr Tyr Leu	465	470	475	480	
acc aag aaa aat gag aat tat aaa gcc ctc gtc aga agg aat tat ggg					1728
Thr Lys Lys Asn Glu Asn Tyr Lys Ala Leu Val Arg Arg Asn Tyr Gly	485	490	495		
aaa cgc aga ggc aga aac cag caa att gct cga ccc tcg caa gaa gaa					1776
Lys Arg Arg Gly Arg Asn Gln Gln Ile Ala Arg Pro Ser Gln Glu Glu	500	505	510		
aaa gta gaa gaa aaa gaa gag gat aaa gca gaa aaa aca gaa aaa aaa					1824
Lys Val Glu Glu Lys Glu Asp Lys Ala Glu Lys Thr Glu Lys Lys	515	520	525		
gaa gaa gaa aag aaa gat gaa gag gaa aaa gat gaa aaa gaa gac tcc					1872
Glu Glu Glu Lys Lys Asp Glu Glu Lys Asp Glu Lys Asp Glu Asp Ser	530	535	540		
aaa gaa aat acc aag gaa aag gac aag ata gat ggt aca gca gaa gaa					1920
Lys Glu Asn Thr Lys Glu Lys Asp Lys Ile Asp Gly Thr Ala Glu Glu	545	550	555	560	
act gag gaa aga gag caa gcc aca ccc cgg ggg cga aag act gcc aac					1968
Thr Glu Glu Arg Glu Gln Ala Thr Pro Arg Gly Arg Lys Thr Ala Asn	565	570	575		
agt cag ggc cgc cgt aag ggc cgg atc acc agg tcc atg aca aac gaa					2016
Ser Gln Gly Arg Arg Lys Gly Arg Ile Thr Arg Ser Met Thr Asn Glu	580	585	590		
gct gca gct gcc agt gct gca gcc gca gcg gct act gaa gag ccc cca					2064
Ala Ala Ala Ala Ser Ala Ala Ala Ala Ala Ala Ala Thr Glu Glu Pro Pro	595	600	605		
cca cct ctg cca ccg cca cca gaa ccc att tct aca gag cct gtg gag					2112
Pro Pro Leu Pro Pro Pro Glu Pro Ile Ser Thr Glu Pro Val Glu					

610

615

620

acc tct cga tgg aca gaa gaa gaa atg gaa gtt gct aaa aaa ggt cta	2160
Thr Ser Arg Trp Thr Glu Glu Glu Met Glu Val Ala Lys Lys Gly Leu	
625 630 635 640	
gta gaa cat ggt cgt aac tgg gca gca att gct aaa atg gtg gga acg	2208
Val Glu His Gly Arg Asn Trp Ala Ala Ile Ala Lys Met Val Gly Thr	
645 650 655	
aaa agt gaa gct caa tgt aaa aac ttc tat ttt aac tat aaa agg cga	2256
Lys Ser Glu Ala Gln Cys Lys Asn Phe Tyr Phe Asn Tyr Lys Arg Arg	
660 665 670	
cac aat ctt gac aac ctc tta cag cag cat aaa cag aaa act tca cga	2304
His Asn Leu Asp Asn Leu Leu Gln Gln His Lys Gln Lys Thr Ser Arg	
675 680 685	
aaa cct cgt gaa gag cga gat gtg tct caa tgt gaa agt gtc gct tcc	2352
Lys Pro Arg Glu Glu Arg Asp Val Ser Gln Cys Glu Ser Val Ala Ser	
690 695 700	
act gtt tct gct cag gag gat gaa gat att gaa gcc tcc aat gaa gaa	2400
Thr Val Ser Ala Gln Glu Asp Glu Asp Ile Glu Ala Ser Asn Glu Glu	
705 710 715 720	
gaa aat cca gaa gac agc gaa gtt gaa gct gtc aag ccc agc gag gac	2448
Glu Asn Pro Glu Asp Ser Glu Val Glu Ala Val Lys Pro Ser Glu Asp	
725 730 735	
agt cct gaa aat gct act tct cga gga aac aca gaa cct gcg gtt gag	2496
Ser Pro Glu Asn Ala Thr Ser Arg Gly Asn Thr Glu Pro Ala Val Glu	
740 745 750	
ctt gag ccc acc acg gaa act gca ccc agt aca tct ccc tcc tta gca	2544
Leu Glu Pro Thr Thr Glu Thr Ala Pro Ser Thr Ser Pro Ser Leu Ala	
755 760 765	
gtt cca agt aca aaa cca gct gaa gat gaa agt gtg gag acc cag gtg	2592
Val Pro Ser Thr Lys Pro Ala Glu Asp Glu Ser Val Glu Thr Gln Val	
770 775 780	
aat gac agc atc agt gct gag aca gca gag cag atg gat gta gat cag	2640
Asn Asp Ser Ile Ser Ala Glu Thr Ala Glu Glu Gln Met Asp Val Asp Gln	
785 790 795 800	
cag gag cac agt gct gaa gag ggt tct gtt tgt gat ccc cca ccc gct	2688
Gln Glu His Ser Ala Glu Glu Gly Ser Val Cys Asp Pro Pro Ala	
805 810 815	
acc aaa gct gac tct gtg gac gtt gaa gtg agg gtg cca gaa aac cat	2736
Thr Lys Ala Asp Ser Val Asp Val Glu Val Arg Val Pro Glu Asn His	
820 825 830	
gca tct aaa gtt gaa ggt gat aat acc aaa gaa aga gac ttg gat aga	2784
Ala Ser Lys Val Glu Gly Asp Asn Thr Lys Glu Arg Asp Leu Asp Arg	
835 840 845	
gcc agt gag aag gtg gaa cct aga gat gaa gat ttg gtg gta gct cag	2832
Ala Ser Glu Lys Val Glu Pro Arg Asp Glu Asp Leu Val Val Ala Gln	

850

855

860

caa ata aat gcc caa agg ccc gag ccc cag tca gac aat gat tcc agt Gln Ile Asn Ala Gln Arg Pro Glu Pro Gln Ser Asp Asn Asp Ser Ser 865	870	875	880	2880
gcc acg tgc agc gct gat gag gat gtg gat gga gag cca gag agg cag Ala Thr Cys Ser Ala Asp Glu Asp Val Asp Gly Glu Pro Glu Arg Gln 885	890	895		2928
aga atg ttt cct atg gac tca aag cct tca ctg tta aac ccc act gga Arg Met Phe Pro Met Asp Ser Lys Pro Ser Leu Leu Asn Pro Thr Gly 900	905	910		2976
tct ata ctc gtc tca tct ccg tta aaa cca aat cca ctg gat ctg cca Ser Ile Leu Val Ser Ser Pro Leu Lys Pro Asn Pro Leu Asp Leu Pro 915	920	925		3024
cag ctt cag cat cga gct gct gtt atc cca cca atg gta tcc tgc acc Gln Leu Gln His Arg Ala Ala Val Ile Pro Pro Met Val Ser Cys Thr 930	935	940		3072
cca tgt aac ata cca att gga acc cca gtc agc ggc tat gct ctc tac Pro Cys Asn Ile Pro Ile Gly Thr Pro Val Ser Gly Tyr Ala Leu Tyr 945	950	955	960	3120
cag cga cac att aaa gca atg cat gag tca gca ctc ctg gag gag cag Gln Arg His Ile Lys Ala Met His Glu Ser Ala Leu Leu Glu Glu Gln 965	970	975		3168
cgg cag aga caa gaa cag ata gat ttg gaa tgt aga agt tct aca agt Arg Gln Arg Gln Glu Gln Ile Asp Leu Glu Cys Arg Ser Ser Thr Ser 980	985	990		3216
cca tgt ggc aca tcc aag agt cca aac aga gag tgg gaa gtc ctt cag Pro Cys Gly Thr Ser Lys Ser Pro Asn Arg Glu Trp Glu Val Leu Gln 995	1000	1005		3264
cct gct cca cat caa ttg ata act aat ctc cct gaa ggc gtt cgg ctt Pro Ala Pro His Gln Leu Ile Thr Asn Leu Pro Glu Gly Val Arg Leu 1010	1015	1020		3312
ccg aca act cga cca acc agg cca ccg ccc cct ctc atc ccg tca tcc Pro Thr Thr Arg Pro Thr Arg Pro Pro Pro Leu Ile Pro Ser Ser 1025	1030	1035	1040	3360
aaa acc aca gtg gct tca gaa aaa cca tct ttt ata atg gga ggc tcc Lys Thr Thr Val Ala Ser Glu Lys Pro Ser Phe Ile Met Gly Gly Ser 1045	1050	1055		3408
atc tca cag gga aca cca ggc act tat ttg act tct cat aat cag gct Ile Ser Gln Gly Thr Pro Gly Thr Tyr Leu Thr Ser His Asn Gln Ala 1060	1065	1070		3456
tcc tac act caa gaa aca ccc aag ccg tca gta gga tct atc tct ctt Ser Tyr Thr Gln Glu Thr Pro Lys Pro Ser Val Gly Ser Ile Ser Leu 1075	1080	1085		3504
gga ctg cca cgg caa cag gaa tct gcc aaa tca gct act ttg ccc tac Gly Leu Pro Arg Gln Gln Glu Ser Ala Lys Ser Ala Thr Leu Pro Tyr				3552

1090	1095	1100	
atc aag cag gaa ttt tct ccc cga agc caa aac tca caa cct gag Ile Lys Gln Glu Glu Phe Ser Pro Arg Ser Gln Asn Ser Gln Pro Glu 1105 1110 1115 1120			3600
ggt ctg ttg gtc agg gcc caa cat gaa ggt gta gtc aga ggt acc gca Gly Leu Leu Val Arg Ala Gln His Glu Gly Val Val Arg Gly Thr Ala 1125 1130 1135			3648
gga gcc ata caa gaa gga agt ata act cgg gga act cca acc agc aaa Gly Ala Ile Gln Glu Gly Ser Ile Thr Arg Gly Thr Pro Thr Ser Lys 1140 1145 1150			3696
att tca gtg gag agc att cca tcc cta cgg ggc tct atc act cag ggc Ile Ser Val Glu Ser Ile Pro Ser Leu Arg Gly Ser Ile Thr Gln Gly 1155 1160 1165			3744
acc ccg gct ctg ccc cag act ggc ata cca aca gag gct ttg gtg aag Thr Pro Ala Leu Pro Gln Thr Gly Ile Pro Thr Glu Ala Leu Val Lys 1170 1175 1180			3792
ggg tcc att tcg aga atg ccc att gaa gac agc agt cct gag aaa ggc Gly Ser Ile Ser Arg Met Pro Ile Glu Asp Ser Ser Pro Glu Lys Gly 1185 1190 1195 1200			3840
aga gag gaa gct gca tcc aaa ggc cat gtt att tat gaa ggc aaa agt Arg Glu Glu Ala Ala Ser Lys Gly His Val Ile Tyr Glu Gly Lys Ser 1205 1210 1215			3888
gga cat atc ttg tca tat gat aat att aag aat gcc cga gaa ggg act Gly His Ile Leu Ser Tyr Asp Asn Ile Lys Asn Ala Arg Glu Gly Thr 1220 1225 1230			3936
agg agt cca aga aca gct cat gaa atc agt tta aag aga agc tat gaa Arg Ser Pro Arg Thr Ala His Glu Ile Ser Leu Lys Arg Ser Tyr Glu 1235 1240 1245			3984
tca gtg gaa gga aat ata aag caa ggg atg tca atg agg gag tct cct Ser Val Glu Gly Asn Ile Lys Gln Gly Met Ser Met Arg Glu Ser Pro 1250 1255 1260			4032
gta tca gca ccg tta gag ggg ctg ata tgc cga gca tta ccc agg ggg Val Ser Ala Pro Leu Glu Gly Leu Ile Cys Arg Ala Leu Pro Arg Gly 1265 1270 1275 1280			4080
agt cct cat tct gac ctc aaa gaa agg act gta ttg tct ggc tcc ata Ser Pro His Ser Asp Leu Lys Glu Arg Thr Val Leu Ser Gly Ser Ile 1285 1290 1295			4128
atg cag ggg aca cca aga gca aca act gaa agc ttt gaa gat ggc ctt Met Gln Gly Thr Pro Arg Ala Thr Thr Glu Ser Phe Glu Asp Gly Leu 1300 1305 1310			4176
aaa tat ccc aaa caa att aaa agg gaa agt cct ccc ata cga gca ttt Lys Tyr Pro Lys Gln Ile Lys Arg Glu Ser Pro Pro Ile Arg Ala Phe 1315 1320 1325			4224
gaa ggt gcc att acc aaa gga aaa cca tat gat ggc atc acc acc atc Glu Gly Ala Ile Thr Lys Gly Lys Pro Tyr Asp Gly Ile Thr Thr Ile			4272

1330	1335	1340	
aaa gaa atg ggg cgt tcc att cat gag att cca agg caa gat att tta Lys Glu Met Gly Arg Ser Ile His Glu Ile Pro Arg Gln Asp Ile Leu 1345 1350 1355 1360			4320
act cag gaa agt cgg aaa act cca gaa gtg gtc cag agc aca cgg ccg Thr Gln Glu Ser Arg Lys Thr Pro Glu Val Val Gln Ser Thr Arg Pro 1365 1370 1375			4368
ata att gag ggt tcc att tcc cag ggc aca cca ata aag ttt gac aac Ile Ile Glu Gly Ser Ile Ser Gln Gly Thr Pro Ile Lys Phe Asp Asn 1380 1385 1390			4416
aac tca ggt caa tct gcc atc aaa cac aat gtc aaa tcc tta atc acg Asn Ser Gly Gln Ser Ala Ile Lys His Asn Val Lys Ser Leu Ile Thr 1395 1400 1405			4464
ggg cct agc aaa cta tcc cgt gga atg cct ccg ctg gaa att gtg cca Gly Pro Ser Lys Leu Ser Arg Gly Met Pro Pro Leu Glu Ile Val Pro 1410 1415 1420			4512
gag aac ata aaa gtg gta gaa cgg gga aaa tat gag gat gtg aaa gca Glu Asn Ile Lys Val Val Glu Arg Gly Lys Tyr Glu Asp Val Lys Ala 1425 1430 1435 1440			4560
ggc gag acc gtg cgt tcc cgg cac acg tca gtg gta agc tct ggc ccc Gly Glu Thr Val Arg Ser Arg His Thr Ser Val Val Ser Ser Gly Pro 1445 1450 1455			4608
tcc gtt ctt agg tcc aca ctg cat gaa gct ccc aaa gca caa ctg agc Ser Val Leu Arg Ser Thr Leu His Glu Ala Pro Lys Ala Gln Leu Ser 1460 1465 1470			4656
cct ggg att tat gat gac acc agt gca cgg agg acc cct gtg agt tat Pro Gly Ile Tyr Asp Asp Thr Ser Ala Arg Arg Thr Pro Val Ser Tyr 1475 1480 1485			4704
caa aac acc atg tcc aga ggc tca ccc atg atg aac aga act tct gat Gln Asn Thr Met Ser Arg Gly Ser Pro Met Met Asn Arg Thr Ser Asp 1490 1495 1500			4752
gtt aca att cct cct aac aag tct acc aat cat gaa agg aaa tcg aca Val Thr Ile Pro Pro Asn Lys Ser Thr Asn His Glu Arg Lys Ser Thr 1505 1510 1515 1520			4800
ctg acc cct acc cag agg gaa agt atc cca gcg aag tct cca gtg cct Leu Thr Pro Thr Gln Arg Glu Ser Ile Pro Ala Lys Ser Pro Val Pro 1525 1530 1535			4848
ggg gtg gac cct gtc gtg agc cac agt ccg ttt gat ccc cat cac aga Gly Val Asp Pro Val Val Ser His Ser Pro Phe Asp Pro His His Arg 1540 1545 1550			4896
ggc agc act gca ggc gag gtt tat tgg agc cac ctg ccc acg caa ttg Gly Ser Thr Ala Gly Glu Val Tyr Trp Ser His Leu Pro Thr Gln Leu 1555 1560 1565			4944
gat cca gcc atg cct ttt cac agg gct ttg gat cct gca gcg gct gct Asp Pro Ala Met Pro Phe His Arg Ala Leu Asp Pro Ala Ala Ala			4992

1570

1575

1580

tac	ctg	ttt	cag	aga	cag	ctt	tca	cca	act	cca	ggt	tac	cca	agt	cag	5040
Tyr	Leu	Phe	Gln	Arg	Gln	Leu	Ser	Pro	Thr	Pro	Gly	Tyr	Pro	Ser	Gln	
1585						1590			1595			1600				
tat	cag	ctt	tac	gca	atg	gag	aac	aca	aga	cag	aca	atc	tta	aat	gat	5088
Tyr	Gln	Leu	Tyr	Ala	Met	Glu	Asn	Thr	Arg	Gln	Thr	Ile	Leu	Asn	Asp	
						1605			1610			1615				
tac	att	acc	tca	caa	cag	atg	caa	gtg	aac	ttg	cgt	cca	gat	gtg	gcc	5136
Tyr	Ile	Thr	Ser	Gln	Gln	Met	Gln	Val	Asn	Leu	Arg	Pro	Asp	Val	Ala	
						1620			1625			1630				
aga	gga	ctc	tcc	cca	aga	gag	cag	cca	ctg	ggt	ctc	cca	tac	cca	gca	5184
Arg	Gly	Leu	Ser	Pro	Arg	Glu	Gln	Pro	Leu	Gly	Leu	Pro	Tyr	Pro	Ala	
						1635			1640			1645				
acg	aga	gga	atc	att	gac	ctg	acc	aat	atg	cct	cca	aca	att	tta	gtg	5232
Thr	Arg	Gly	Ile	Ile	Asp	Leu	Thr	Asn	Met	Pro	Pro	Thr	Ile	Leu	Val	
						1650			1655			1660				
cct	cat	cca	ggg	gga	aca	agc	act	cct	ccc	atg	gac	aga	atc	act	tat	5280
Pro	His	Pro	Gly	Gly	Thr	Ser	Thr	Pro	Pro	Met	Asp	Arg	Ile	Thr	Tyr	
						1665			1670			1675			1680	
att	cct	ggt	aca	cag	att	act	ttc	cct	ccc	agg	ccg	tac	aac	tct	gct	5328
Ile	Pro	Gly	Thr	Gln	Ile	Thr	Phe	Pro	Pro	Arg	Pro	Tyr	Asn	Ser	Ala	
						1685			1690			1695				
tcc	atg	tct	cca	gga	cac	cca	aca	cac	ctt	gca	gct	gct	gca	agt	gct	5376
Ser	Met	Ser	Pro	Gly	His	Pro	Thr	His	Leu	Ala	Ala	Ala	Ala	Ser	Ala	
						1700			1705			1710				
gag	agg	gaa	cg	gaa	cg	gag	cg	gag	aag	gag	cg	gag	cg	gaa	cg	5424
Glu	Arg	Glu	Arg	Glu	Arg	Glu	Arg	Glu	Lys	Glu	Arg	Glu	Arg	Glu	Arg	
						1715			1720			1725				
att	gct	gca	gct	tcc	tcc	gac	ctc	tac	ctg	cg	cca	ggc	tca	gaa	cag	5472
Ile	Ala	Ala	Ala	Ser	Ser	Asp	Leu	Tyr	Leu	Arg	Pro	Gly	Ser	Glu	Gln	
						1730			1735			1740				
cct	ggc	cga	cct	ggc	agt	cat	gga	tat	gtt	cg	tcc	cct	tcc	cct	tca	5520
Pro	Gly	Arg	Pro	Gly	Ser	His	Gly	Tyr	Val	Arg	Ser	Pro	Ser	Pro	Ser	
						1745			1750			1755			1760	
gta	aga	act	cag	gag	acc	atg	ttg	caa	cag	aga	ccc	agt	gtt	ttc	caa	5568
Val	Arg	Thr	Gln	Glu	Thr	Met	Leu	Gln	Gln	Arg	Pro	Ser	Val	Phe	Gln	
						1765			1770			1775				
gga	acc	aat	gga	acc	agt	gta	atc	aca	cct	ttg	gat	cca	act	gct	cag	5616
Gly	Thr	Asn	Gly	Thr	Ser	Val	Ile	Thr	Pro	Leu	Asp	Pro	Thr	Ala	Gln	
						1780			1785			1790				
cta	cga	atc	atg	cca	ctg	cct	gct	ggg	ggc	cct	tca	ata	agc	caa	ggc	5664
Leu	Arg	Ile	Met	Pro	Leu	Pro	Ala	Gly	Gly	Pro	Ser	Ile	Ser	Gln	Gly	
						1795			1800			1805				
ctg	cca	gcc	tcc	cgt	tac	aac	act	gct	gcg	gat	gcc	ctg	gct	gct	ctt	5712
Leu	Pro	Ala	Ser	Arg	Tyr	Asn	Thr	Ala	Ala	Asp	Ala	Leu	Ala	Ala	Leu	

1810

1815

1820

gtg gat gct gca gct tct gca ccc cag atg gat gtg tcc aaa aca aaa	1825	1830	1835	1840	5760
Val Asp Ala Ala Ala Ser Ala Pro Gln Met Asp Val Ser Lys Thr Lys					
1845	1850	1855			5808
gag agt aag cat gaa gct gcc agg tta gaa gaa aat ttg aga agc agg					
Glu Ser Lys His Glu Ala Ala Arg Leu Glu Glu Asn Leu Arg Ser Arg					
1860	1865	1870			5856
tca gca gca gtt agt gaa cag cag cta gag cag aaa acc ctg gag					
Ser Ala Ala Val Ser Glu Gln Gln Leu Glu Gln Lys Thr Leu Glu					
1875	1880	1885			5904
gtg gag aag aga tct gtt cag tgt tta tac act tct tca gcc ttt cca					
Val Glu Lys Arg Ser Val Gln Cys Leu Tyr Thr Ser Ser Ala Phe Pro					
1890	1895	1900			5952
agt ggc aag ccc cag cct cat tct tca gta gtt tat tct gag gct ggg					
Ser Gly Lys Pro Gln Pro His Ser Ser Val Val Tyr Ser Glu Ala Gly					
1905	1910	1915	1920		6000
aaa gat aaa ggg cct cct cca aaa tcc aga tat gag gaa gag cta agg					
Lys Asp Lys Gly Pro Pro Lys Ser Arg Tyr Glu Glu Glu Leu Arg					
1925	1930	1935			6048
acc aga ggg aag act acc att act gca gct aac ttc ata gac gtg atc					
Thr Arg Gly Lys Thr Thr Ile Thr Ala Ala Asn Phe Ile Asp Val Ile					
1940	1945	1950			6096
atc acc cgg caa att gcc tcg gac aag gat gcg agg gaa cgt ggc tct					
Ile Thr Arg Gln Ile Ala Ser Asp Lys Asp Ala Arg Glu Arg Gly Ser					
1955	1960	1965			6144
caa agt tca gac tct tct agt agc tta tct tct cac agg tat gaa aca					
Gln Ser Ser Asp Ser Ser Leu Ser Ser His Arg Tyr Glu Thr					
1970	1975	1980			6192
ccc cag gag aaa ctg cag acc tat cag cca gag gtt gtt aag gca aat					
Pro Gln Glu Lys Leu Gln Thr Tyr Gln Pro Glu Val Val Lys Ala Asn					
1985	1990	1995	2000		6240
caa gcg gaa aat gat cct acc aga caa tat gaa gga cca tta cat cac					
Gln Ala Glu Asn Asp Pro Thr Arg Gln Tyr Glu Gly Pro Leu His His					
2005	2010	2015			6288
tat cga cca cag cag gaa tca cca tct ccc caa caa cag ctg ccc cct					
Tyr Arg Pro Gln Gln Glu Ser Pro Ser Pro Gln Gln Gln Leu Pro Pro					
2020	2025	2030			6336
tct tca cag gca gag gga atg ggg caa gtg ccc agg acc cat cgg ctg					
Ser Ser Gln Ala Glu Gly Met Gly Gln Val Pro Arg Thr His Arg Leu					
2035	2040	2045			6384
atc aca ctt gct gat cac atc tgt caa att atc aca caa gat ttt gct					
Ile Thr Leu Ala Asp His Ile Cys Gln Ile Ile Thr Gln Asp Phe Ala					
					6432

2050

2055

2060

aga aat caa gtt tcc tcg cag act ccc cag cag cct cct act tct aca	6480
Arg Asn Gln Val Ser Ser Gln Thr Pro Gln Gln Pro Pro Thr Ser Thr	
2065 2070 2075 2080	
ttc cag aac tca cct tct gct ttg gta tct aca cct gtg agg act aaa	6528
Phe Gln Asn Ser Pro Ser Ala Leu Val Ser Thr Pro Val Arg Thr Lys	
2085 2090 2095	
aca tca aac cgt tac agc cca gaa tcc cag gct cag tct gtc cat cat	6576
Thr Ser Asn Arg Tyr Ser Pro Glu Ser Gln Ala Gln Ser Val His His	
2100 2105 2110	
caa aga cca ggt tca agg gtc tct cca gaa aat ctt gtg gac aaa tcc	6624
Gln Arg Pro Gly Ser Arg Val Ser Pro Glu Asn Leu Val Asp Lys Ser	
2115 2120 2125	
agg gga agt agg cct gga aaa tcc cca gag agg agt cac gtc tct tcc	6672
Arg Gly Ser Arg Pro Gly Lys Ser Pro Glu Arg Ser His Val Ser Ser	
2130 2135 2140	
gag ccc tac gag ccc atc tcc cca ccc cag gtt ccg gtt gtg cat gag	6720
Glu Pro Tyr Glu Pro Ile Ser Pro Pro Gln Val Pro Val Val His Glu	
2145 2150 2155 2160	
aaa cag gac agc ttg ctg ctc ttg tct cag agg ggc gca gag cct gca	6768
Lys Gln Asp Ser Leu Leu Leu Ser Gln Arg Gly Ala Glu Pro Ala	
2165 2170 2175	
gag cag agg aat gat gcc cgc tca cca ggg agt ata agc tac ttg cct	6816
Glu Gln Arg Asn Asp Ala Arg Ser Pro Gly Ser Ile Ser Tyr Leu Pro	
2180 2185 2190	
tca ttc ttc acc aag ctt gaa aat aca tca ccc atg gtt aaa tca aag	6864
Ser Phe Phe Thr Lys Leu Glu Asn Thr Ser Pro Met Val Lys Ser Lys	
2195 2200 2205	
aag cag gag att ttt cgt aag ttg aac tcc tct ggt gga ggt gac tct	6912
Lys Gln Glu Ile Phe Arg Lys Leu Asn Ser Ser Gly Gly Asp Ser	
2210 2215 2220	
gat atg gca gct gct cag cca gga act gag atc ttt aat ctg cca gca	6960
Asp Met Ala Ala Ala Gln Pro Gly Thr Glu Ile Phe Asn Leu Pro Ala	
2225 2230 2235 2240	
gtt act acg tca ggc tca gtt agc tct aga ggc cat tct ttt gct gat	7008
Val Thr Thr Ser Gly Ser Val Ser Ser Arg Gly His Ser Phe Ala Asp	
2245 2250 2255	
cct gcc agt aat ctt ggg ctg gaa gac att atc agg aag gct ctc atg	7056
Pro Ala Ser Asn Leu Gly Leu Glu Asp Ile Ile Arg Lys Ala Leu Met	
2260 2265 2270	
gga agc ttt gat gac aaa gtt gag gat cat gga gtt gtc atg tcc cag	7104
Gly Ser Phe Asp Asp Lys Val Glu Asp His Gly Val Val Met Ser Gln	
2275 2280 2285	
cct atg gga gta gtg cct ggt act gcc aac acc tca gtt gtg acc agt	7152
Pro Met Gly Val Val Pro Gly Thr Ala Asn Thr Ser Val Val Thr Ser	

2290

2295

2300

ggt gag aca cga aga gag gaa ggg gac cca tca cct cat tca gga gga	7200
Gly Glu Thr Arg Arg Glu Glu Gly Asp Pro Ser Pro His Ser Gly Gly	
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gtt tgc aaa cca aag ctg atc agc aag tca aac agc agg aaa tct aag	7248
Val Cys Lys Pro Lys Leu Ile Ser Lys Ser Asn Ser Arg Lys Ser Lys	
2325 2330 2335	
tct cct ata cct ggg caa ggc tac tta gga acg gaa cgg ccc tct tca	7296
Ser Pro Ile Pro Gly Gln Gly Tyr Leu Gly Thr Glu Arg Pro Ser Ser	
2340 2345 2350	
gtc tcc tct gta cat tca gaa ggg gat tac cat agg cag acg cca ggg	7344
Val Ser Ser Val His Ser Glu Gly Asp Tyr His Arg Gln Thr Pro Gly	
2355 2360 2365	
tgg gcc tgg gaa gac agg ccc tct tca aca ggc tca act cag ttt cct	7392
Trp Ala Trp Glu Asp Arg Pro Ser Ser Thr Gly Ser Thr Gln Phe Pro	
2370 2375 2380	
tat aac cct ctg act atg cgg atg ctc agc agt act cca cca aca ccg	7440
Tyr Asn Pro Leu Thr Met Arg Met Leu Ser Ser Thr Pro Pro Thr Pro	
2385 2390 2395 2400	
att gca tgt gct ccc tct gcg gtg aac caa gca gct cct cac caa cag	7488
Ile Ala Cys Ala Pro Ser Ala Val Asn Gln Ala Ala Pro His Gln Gln	
2405 2410 2415	
aac agg atc tgg gag cga gag cct gcc cca ctg ctc tca gca cag tac	7536
Asn Arg Ile Trp Glu Arg Glu Pro Ala Pro Leu Leu Ser Ala Gln Tyr	
2420 2425 2430	
gag acc ctg tcg gat agt gat gac tga actgcacaaa gtgagggaa	7583
Glu Thr Leu Ser Asp Ser Asp Asp *	
2435 2440	
cagggtgcag gagagggatc tctagtttt gtggttaat ttttagtagc aggtcaaaaa	7643
cctccctcc tgtgacttat tccctgagac tttcaggag agccagccca cagatgtga	7703
agaaatgtat gaagttcatt tggagagtca aatggaaaa aaacaaacaa aaaactgcct	7763
ttgatacagg caattcagtg gactataata atatggagg gttgagatgt agatttta	7823
aaaagtgaac agttgctgtt cttacatctg taaagaaaac cataatgtct ttaaatcact	7883
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1 5 10 15	
Gln Ser Arg Tyr Pro Pro His Ser Val Gln Tyr Thr Phe Pro Asn Thr	
20 25 30	
Arg His Gln Gln Glu Phe Ala Val Pro Asp Tyr Arg Ser Ser His Leu	
35 40 45	
Glu Val Ser Gln Ala Ser Gln Leu Leu Gln Gln Gln Gln Gln Gln	
50 55 60	
Leu Arg Arg Arg Pro Ser Leu Leu Ser Glu Phe His Pro Gly Ser Asp	

65	70	75	80
Arg Pro Gln Glu Arg Arg Thr Ser Tyr Glu Pro Phe His Pro Gly Pro			
85	90	95	
Ser Pro Val Asp His Asp Ser Leu Glu Ser Lys Arg Pro Arg Leu Glu			
100	105	110	
Gln Val Ser Asp Ser His Phe Gln Arg Val Ser Ala Ala Val Leu Pro			
115	120	125	
Leu Val His Pro Leu Pro Glu Gly Leu Arg Ala Ser Ala Asp Ala Lys			
130	135	140	
Lys Asp Pro Ala Phe Gly Gly Lys His Glu Ala Pro Ser Ser Pro Ile			
145	150	155	160
Ser Gly Gln Pro Cys Gly Asp Asp Gln Asn Ala Ser Pro Ser Lys Leu			
165	170	175	
Ser Lys Glu Glu Leu Ile Gln Ser Met Asp Arg Val Asp Arg Glu Ile			
180	185	190	
Ala Lys Val Glu Gln Gln Ile Leu Lys Leu Lys Lys Gln Gln Gln			
195	200	205	
Leu Glu Glu Ala Ala Lys Pro Pro Glu Pro Glu Lys Pro Val Ser			
210	215	220	
Pro Pro Pro Val Glu Gln Lys His Arg Ser Ile Val Gln Ile Ile Tyr			
225	230	235	240
Asp Glu Asn Arg Lys Lys Ala Glu Glu Ala His Lys Ile Phe Glu Gly			
245	250	255	
Leu Gly Pro Lys Val Glu Leu Pro Leu Tyr Asn Gln Pro Ser Asp Thr			
260	265	270	
Lys Val Tyr His Glu Asn Ile Lys Thr Asn Gln Val Met Arg Lys Lys			
275	280	285	
Leu Ile Leu Phe Phe Lys Arg Arg Asn His Ala Arg Lys Gln Arg Glu			
290	295	300	
Gln Lys Ile Cys Gln Arg Tyr Asp Gln Leu Met Glu Ala Trp Glu Lys			
305	310	315	320
Lys Val Asp Arg Ile Glu Asn Asn Pro Arg Arg Lys Ala Lys Glu Ser			
325	330	335	
Lys Thr Arg Glu Tyr Tyr Glu Lys Gln Phe Pro Glu Ile Arg Lys Gln			
340	345	350	
Arg Glu Gln Glu Glu Arg Phe Gln Arg Val Gly Gln Arg Gly Ala Gly			
355	360	365	
Leu Ser Ala Thr Ile Ala Arg Ser Glu His Glu Ile Ser Glu Ile Ile			
370	375	380	
Asp Gly Leu Ser Glu Gln Glu Asn Asn Glu Lys Gln Met Arg Gln Leu			
385	390	395	400
Ser Val Ile Pro Pro Met Met Phe Asp Ala Glu Gln Arg Arg Val Lys			
405	410	415	
Phe Ile Asn Met Asn Gly Leu Met Glu Asp Pro Met Lys Val Tyr Lys			
420	425	430	
Asp Arg Gln Phe Met Asn Val Trp Thr Asp His Glu Lys Glu Ile Phe			
435	440	445	
Lys Asp Lys Phe Ile Gln His Pro Lys Asn Phe Gly Leu Ile Ala Ser			
450	455	460	
Tyr Leu Glu Arg Lys Ser Val Pro Asp Cys Val Leu Tyr Tyr Tyr Leu			
465	470	475	480
Thr Lys Lys Asn Glu Asn Tyr Lys Ala Leu Val Arg Arg Asn Tyr Gly			
485	490	495	
Lys Arg Arg Gly Arg Asn Gln Gln Ile Ala Arg Pro Ser Gln Glu Glu			
500	505	510	
Lys Val Glu Glu Lys Glu Glu Asp Lys Ala Glu Lys Thr Glu Lys Lys			
515	520	525	
Glu Glu Glu Lys Lys Asp Glu Glu Glu Lys Asp Glu Lys Glu Asp Ser			
530	535	540	
Lys Glu Asn Thr Lys Glu Lys Asp Lys Ile Asp Gly Thr Ala Glu Glu			

545 550 555 560  
 Thr Glu Glu Arg Glu Gln Ala Thr Pro Arg Gly Arg Lys Thr Ala Asn  
       565       570       575  
 Ser Gln Gly Arg Arg Lys Gly Arg Ile Thr Arg Ser Met Thr Asn Glu  
       580       585       590  
 Ala Ala Ala Ala Ser Ala Ala Ala Ala Ala Ala Thr Glu Glu Pro Pro  
       595       600       605  
 Pro Pro Leu Pro Pro Pro Glu Pro Ile Ser Thr Glu Pro Val Glu  
       610       615       620  
 Thr Ser Arg Trp Thr Glu Glu Glu Met Glu Val Ala Lys Lys Gly Leu  
       625       630       635       640  
 Val Glu His Gly Arg Asn Trp Ala Ala Ile Ala Lys Met Val Gly Thr  
       645       650       655  
 Lys Ser Glu Ala Gln Cys Lys Asn Phe Tyr Phe Asn Tyr Lys Arg Arg  
       660       665       670  
 His Asn Leu Asp Asn Leu Leu Gln Gln His Lys Gln Lys Thr Ser Arg  
       675       680       685  
 Lys Pro Arg Glu Glu Arg Asp Val Ser Gln Cys Glu Ser Val Ala Ser  
       690       695       700  
 Thr Val Ser Ala Gln Glu Asp Glu Asp Ile Glu Ala Ser Asn Glu Glu  
       705       710       715       720  
 Glu Asn Pro Glu Asp Ser Glu Val Glu Ala Val Lys Pro Ser Glu Asp  
       725       730       735  
 Ser Pro Glu Asn Ala Thr Ser Arg Gly Asn Thr Glu Pro Ala Val Glu  
       740       745       750  
 Leu Glu Pro Thr Thr Glu Thr Ala Pro Ser Thr Ser Pro Ser Leu Ala  
       755       760       765  
 Val Pro Ser Thr Lys Pro Ala Glu Asp Glu Ser Val Glu Thr Gln Val  
       770       775       780  
 Asn Asp Ser Ile Ser Ala Glu Thr Ala Glu Gln Met Asp Val Asp Gln  
       785       790       795       800  
 Gln Glu His Ser Ala Glu Glu Gly Ser Val Cys Asp Pro Pro Pro Ala  
       805       810       815  
 Thr Lys Ala Asp Ser Val Asp Val Glu Val Arg Val Pro Glu Asn His  
       820       825       830  
 Ala Ser Lys Val Glu Gly Asp Asn Thr Lys Glu Arg Asp Leu Asp Arg  
       835       840       845  
 Ala Ser Glu Lys Val Glu Pro Arg Asp Glu Asp Leu Val Val Ala Gln  
       850       855       860  
 Gln Ile Asn Ala Gln Arg Pro Glu Pro Gln Ser Asp Asn Asp Ser Ser  
       865       870       875       880  
 Ala Thr Cys Ser Ala Asp Glu Asp Val Asp Gly Glu Pro Glu Arg Gln  
       885       890       895  
 Arg Met Phe Pro Met Asp Ser Lys Pro Ser Leu Leu Asn Pro Thr Gly  
       900       905       910  
 Ser Ile Leu Val Ser Ser Pro Leu Lys Pro Asn Pro Leu Asp Leu Pro  
       915       920       925  
 Gln Leu Gln His Arg Ala Ala Val Ile Pro Pro Met Val Ser Cys Thr  
       930       935       940  
 Pro Cys Asn Ile Pro Ile Gly Thr Pro Val Ser Gly Tyr Ala Leu Tyr  
       945       950       955       960  
 Gln Arg His Ile Lys Ala Met His Glu Ser Ala Leu Leu Glu Glu Gln  
       965       970       975  
 Arg Gln Arg Gln Glu Gln Ile Asp Leu Glu Cys Arg Ser Ser Thr Ser  
       980       985       990  
 Pro Cys Gly Thr Ser Lys Ser Pro Asn Arg Glu Trp Glu Val Leu Gln  
       995       1000       1005  
 Pro Ala Pro His Gln Leu Ile Thr Asn Leu Pro Glu Gly Val Arg Leu  
       1010       1015       1020  
 Pro Thr Thr Arg Pro Thr Arg Pro Pro Pro Leu Ile Pro Ser Ser

1025	1030	1035	1040
Lys Thr Thr Val Ala Ser Glu Lys Pro Ser Phe Ile Met Gly Gly Ser			
1045	1050	1055	
Ile Ser Gln Gly Thr Pro Gly Thr Tyr Leu Thr Ser His Asn Gln Ala			
1060	1065	1070	
Ser Tyr Thr Gln Glu Thr Pro Lys Pro Ser Val Gly Ser Ile Ser Leu			
1075	1080	1085	
Gly Leu Pro Arg Gln Gln Glu Ser Ala Lys Ser Ala Thr Leu Pro Tyr			
1090	1095	1100	
Ile Lys Gln Glu Glu Phe Ser Pro Arg Ser Gln Asn Ser Gln Pro Glu			
1105	1110	1115	1120
Gly Leu Leu Val Arg Ala Gln His Glu Gly Val Val Arg Gly Thr Ala			
1125	1130	1135	
Gly Ala Ile Gln Glu Gly Ser Ile Thr Arg Gly Thr Pro Thr Ser Lys			
1140	1145	1150	
Ile Ser Val Glu Ser Ile Pro Ser Leu Arg Gly Ser Ile Thr Gln Gly			
1155	1160	1165	
Thr Pro Ala Leu Pro Gln Thr Gly Ile Pro Thr Glu Ala Leu Val Lys			
1170	1175	1180	
Gly Ser Ile Ser Arg Met Pro Ile Glu Asp Ser Ser Pro Glu Lys Gly			
1185	1190	1195	1200
Arg Glu Glu Ala Ala Ser Lys Gly His Val Ile Tyr Glu Gly Lys Ser			
1205	1210	1215	
Gly His Ile Leu Ser Tyr Asp Asn Ile Lys Asn Ala Arg Glu Gly Thr			
1220	1225	1230	
Arg Ser Pro Arg Thr Ala His Glu Ile Ser Leu Lys Arg Ser Tyr Glu			
1235	1240	1245	
Ser Val Glu Gly Asn Ile Lys Gln Gly Met Ser Met Arg Glu Ser Pro			
1250	1255	1260	
Val Ser Ala Pro Leu Glu Gly Leu Ile Cys Arg Ala Leu Pro Arg Gly			
1265	1270	1275	1280
Ser Pro His Ser Asp Leu Lys Glu Arg Thr Val Leu Ser Gly Ser Ile			
1285	1290	1295	
Met Gln Gly Thr Pro Arg Ala Thr Thr Glu Ser Phe Glu Asp Gly Leu			
1300	1305	1310	
Lys Tyr Pro Lys Gln Ile Lys Arg Glu Ser Pro Pro Ile Arg Ala Phe			
1315	1320	1325	
Glu Gly Ala Ile Thr Lys Gly Lys Pro Tyr Asp Gly Ile Thr Thr Ile			
1330	1335	1340	
Lys Glu Met Gly Arg Ser Ile His Glu Ile Pro Arg Gln Asp Ile Leu			
1345	1350	1355	1360
Thr Gln Glu Ser Arg Lys Thr Pro Glu Val Val Gln Ser Thr Arg Pro			
1365	1370	1375	
Ile Ile Glu Gly Ser Ile Ser Gln Gly Thr Pro Ile Lys Phe Asp Asn			
1380	1385	1390	
Asn Ser Gly Gln Ser Ala Ile Lys His Asn Val Lys Ser Leu Ile Thr			
1395	1400	1405	
Gly Pro Ser Lys Leu Ser Arg Gly Met Pro Pro Leu Glu Ile Val Pro			
1410	1415	1420	
Glu Asn Ile Lys Val Val Glu Arg Gly Lys Tyr Glu Asp Val Lys Ala			
1425	1430	1435	1440
Gly Glu Thr Val Arg Ser Arg His Thr Ser Val Val Ser Ser Gly Pro			
1445	1450	1455	
Ser Val Leu Arg Ser Thr Leu His Glu Ala Pro Lys Ala Gln Leu Ser			
1460	1465	1470	
Pro Gly Ile Tyr Asp Asp Thr Ser Ala Arg Arg Thr Pro Val Ser Tyr			
1475	1480	1485	
Gln Asn Thr Met Ser Arg Gly Ser Pro Met Met Asn Arg Thr Ser Asp			
1490	1495	1500	
Val Thr Ile Pro Pro Asn Lys Ser Thr Asn His Glu Arg Lys Ser Thr			

1505 1510 1515 1520  
 Leu Thr Pro Thr Gln Arg Glu Ser Ile Pro Ala Lys Ser Pro Val Pro  
     1525 1530 1535  
 Gly Val Asp Pro Val Val Ser His Ser Pro Phe Asp Pro His His Arg  
     1540 1545 1550  
 Gly Ser Thr Ala Gly Glu Val Tyr Trp Ser His Leu Pro Thr Gln Leu  
     1555 1560 1565  
 Asp Pro Ala Met Pro Phe His Arg Ala Leu Asp Pro Ala Ala Ala Ala  
     1570 1575 1580  
 Tyr Leu Phe Gln Arg Gln Leu Ser Pro Thr Pro Gly Tyr Pro Ser Gln  
 1585 1590 1595 1600  
 Tyr Gln Leu Tyr Ala Met Glu Asn Thr Arg Gln Thr Ile Leu Asn Asp  
     1605 1610 1615  
 Tyr Ile Thr Ser Gln Gln Met Gln Val Asn Leu Arg Pro Asp Val Ala  
     1620 1625 1630  
 Arg Gly Leu Ser Pro Arg Glu Gln Pro Leu Gly Leu Pro Tyr Pro Ala  
     1635 1640 1645  
 Thr Arg Gly Ile Ile Asp Leu Thr Asn Met Pro Pro Thr Ile Leu Val  
     1650 1655 1660  
 Pro His Pro Gly Gly Thr Ser Thr Pro Pro Met Asp Arg Ile Thr Tyr  
 1665 1670 1675 1680  
 Ile Pro Gly Thr Gln Ile Thr Phe Pro Pro Arg Pro Tyr Asn Ser Ala  
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 Ser Met Ser Pro Gly His Pro Thr His Leu Ala Ala Ala Ser Ala  
     1700 1705 1710  
 Glu Arg Glu Arg Glu Arg Glu Arg Glu Lys Glu Arg Glu Arg Glu Arg  
     1715 1720 1725  
 Ile Ala Ala Ala Ser Ser Asp Leu Tyr Leu Arg Pro Gly Ser Glu Gln  
     1730 1735 1740  
 Pro Gly Arg Pro Gly Ser His Gly Tyr Val Arg Ser Pro Ser Pro Ser  
 1745 1750 1755 1760  
 Val Arg Thr Gln Glu Thr Met Leu Gln Gln Arg Pro Ser Val Phe Gln  
     1765 1770 1775  
 Gly Thr Asn Gly Thr Ser Val Ile Thr Pro Leu Asp Pro Thr Ala Gln  
     1780 1785 1790  
 Leu Arg Ile Met Pro Leu Pro Ala Gly Gly Pro Ser Ile Ser Gln Gly  
     1795 1800 1805  
 Leu Pro Ala Ser Arg Tyr Asn Thr Ala Ala Asp Ala Leu Ala Ala Leu  
     1810 1815 1820  
 Val Asp Ala Ala Ala Ser Ala Pro Gln Met Asp Val Ser Lys Thr Lys  
 1825 1830 1835 1840  
 Glu Ser Lys His Glu Ala Ala Arg Leu Glu Glu Asn Leu Arg Ser Arg  
     1845 1850 1855  
 Ser Ala Ala Val Ser Glu Gln Gln Leu Glu Gln Lys Thr Leu Glu  
     1860 1865 1870  
 Val Glu Lys Arg Ser Val Gln Cys Leu Tyr Thr Ser Ser Ala Phe Pro  
     1875 1880 1885  
 Ser Gly Lys Pro Gln Pro His Ser Ser Val Val Tyr Ser Glu Ala Gly  
     1890 1895 1900  
 Lys Asp Lys Gly Pro Pro Lys Ser Arg Tyr Glu Glu Glu Leu Arg  
 1905 1910 1915 1920  
 Thr Arg Gly Lys Thr Thr Ile Thr Ala Ala Asn Phe Ile Asp Val Ile  
     1925 1930 1935  
 Ile Thr Arg Gln Ile Ala Ser Asp Lys Asp Ala Arg Glu Arg Gly Ser  
     1940 1945 1950  
 Gln Ser Ser Asp Ser Ser Ser Ser Leu Ser Ser His Arg Tyr Glu Thr  
     1955 1960 1965  
 Pro Ser Asp Ala Ile Glu Val Ile Ser Pro Ala Ser Ser Pro Ala Pro  
     1970 1975 1980  
 Pro Gln Glu Lys Leu Gln Thr Tyr Gln Pro Glu Val Val Lys Ala Asn

1985	1990	1995	2000
Gln Ala Glu Asn Asp Pro Thr Arg Gln	Tyr	Glu Gly Pro Leu His His	
2005		2010	2015
Tyr Arg Pro Gln Gln Glu Ser Pro Ser Pro Gln Gln Gln	Leu	Pro Pro	
2020		2025	2030
Ser Ser Gln Ala Glu Gly Met Gly Gln Val Pro Arg Thr His Arg Leu			
2035		2040	2045
Ile Thr Leu Ala Asp His Ile Cys Gln Ile Ile Thr Gln Asp Phe Ala			
2050		2055	2060
Arg Asn Gln Val Ser Ser Gln Thr Pro Gln Gln Pro Pro Thr Ser Thr			
2065		2070	2075
Phe Gln Asn Ser Pro Ser Ala Leu Val Ser Thr Pro Val Arg Thr Lys			
2085		2090	2095
Thr Ser Asn Arg Tyr Ser Pro Glu Ser Gln Ala Gln Ser Val His His			
2100		2105	2110
Gln Arg Pro Gly Ser Arg Val Ser Pro Glu Asn Leu Val Asp Lys Ser			
2115		2120	2125
Arg Gly Ser Arg Pro Gly Lys Ser Pro Glu Arg Ser His Val Ser Ser			
2130		2135	2140
Glu Pro Tyr Glu Pro Ile Ser Pro Pro Gln Val Pro Val Val His Glu			
2145		2150	2155
Lys Gln Asp Ser Leu Leu Leu Ser Gln Arg Gly Ala Glu Pro Ala			
2165		2170	2175
Glu Gln Arg Asn Asp Ala Arg Ser Pro Gly Ser Ile Ser Tyr Leu Pro			
2180		2185	2190
Ser Phe Phe Thr Lys Leu Glu Asn Thr Ser Pro Met Val Lys Ser Lys			
2195		2200	2205
Lys Gln Glu Ile Phe Arg Lys Leu Asn Ser Ser Gly Gly Asp Ser			
2210		2215	2220
Asp Met Ala Ala Ala Gln Pro Gly Thr Glu Ile Phe Asn Leu Pro Ala			
2225		2230	2235
Val Thr Thr Ser Gly Ser Val Ser Ser Arg Gly His Ser Phe Ala Asp			
2245		2250	2255
Pro Ala Ser Asn Leu Gly Leu Glu Asp Ile Ile Arg Lys Ala Leu Met			
2260		2265	2270
Gly Ser Phe Asp Asp Lys Val Glu Asp His Gly Val Val Met Ser Gln			
2275		2280	2285
Pro Met Gly Val Val Pro Gly Thr Ala Asn Thr Ser Val Val Thr Ser			
2290		2295	2300
Gly Glu Thr Arg Arg Glu Glu Gly Asp Pro Ser Pro His Ser Gly Gly			
2305		2310	2315
Val Cys Lys Pro Lys Leu Ile Ser Lys Ser Asn Ser Arg Lys Ser Lys			
2325		2330	2335
Ser Pro Ile Pro Gly Gln Gly Tyr Leu Gly Thr Glu Arg Pro Ser Ser			
2340		2345	2350
Val Ser Ser Val His Ser Glu Gly Asp Tyr His Arg Gln Thr Pro Gly			
2355		2360	2365
Trp Ala Trp Glu Asp Arg Pro Ser Ser Thr Gly Ser Thr Gln Phe Pro			
2370		2375	2380
Tyr Asn Pro Leu Thr Met Arg Met Leu Ser Ser Thr Pro Pro Thr Pro			
2385		2390	2395
Ile Ala Cys Ala Pro Ser Ala Val Asn Gln Ala Ala Pro His Gln Gln			
2405		2410	2415
Asn Arg Ile Trp Glu Arg Glu Pro Ala Pro Leu Leu Ser Ala Gln Tyr			
2420		2425	2430
Glu Thr Leu Ser Asp Ser Asp Asp			
2435		2440	